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ABSTRACT

A survey examined: (1) the needs classroom teachers seek to fill with instructional video; (2) the design features best suited to meeting those needs; and (3) whether current productions possess such features and meet such needs. Ninety-seven instructors (out of 275) from eight Colorado high schools responded to the survey. Initial attitudes toward video's ability to teach students were positive. The teachers expected high ability students to use the technology in seeking learning, while average and low ability learners were seen as "entertainment seekers." Most respondents indicated a desire to use video to show real-life applications of classroom topics. They also rated the medium's ability to teach actual skills as a primary condition for its instructional use. Interestingly, while teachers ranked content organization and lesson design as more important than production features, they expressed more satisfaction with production features than the other two characteristics. Overall, teachers showed a mistrust of the medium's use for non-traditional purposes. Further research should examine teacher's views on video's ability to capture attention and teach, and the needs and use patterns of video by teachers of various subjects. Increasing teacher control over video may help students become as "media literate" as they are "computer literate." Thirteen tables of data and the survey questionnaire are appended. (58 references) (SG)

# Integrating Curricula, Teachers, and Instructional Video

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The past decade has brought much public concern for the nation's decreased productivity and its standing in the global economy. Public schools, as a primary agent in the training of the country's workforce, have found much of the responsibility for lack of industrial competitiveness laid directly on their doorstep. This has spawned educational reforms which seek to make school curricula more "practical." Students, in short, must be trained to enter the world of work.

Schools responded by making "technology" an educational buzzword. Districts nationwide found places for computers, manufacturing equipment, and other hardware in their classrooms. This did not guarantee that the hardware would find a place in the curriculum as well. Not everyone was impressed with these efforts. The National Governors' Association (1986) argued that the pace of educational "upgrading" lagged behind that of the private sector. It cited perhaps the most prevalent form of instructional technology, video, as a prime example. Though 96% of U.S. schools possessed video equipment, only 14% had any guidelines for its use in teaching students.

This lack of formal guidelines is by no means due to inadequate research. Since the first days of instructional television, investigators have sought to test the medium's mental effects on the viewer. Others have examined an educational system which sometimes impedes the progress of technology in the school. This study will chart some of the work done in each of these areas. However, the most significant barrier to technology implementation may lie elsewhere.

Evans (1968), Coder (1983), and Seidman (1985) all state that skepticism over visual-based forms of learning, especially television/video, is strong among classroom teachers. The reason for this sentiment may be the alienation of the classroom teacher from the instructional design process. This makes it difficult for any practicing teacher to integrate new technology with existing curricula. The previous strands of research have not sought to give teachers some voice in this important area of instructional design. Through a pilot survey, this study explores teachers' attitudes toward instructional video as

a first step in giving them this voice. Perhaps professionals charged with the system's success can tell us what areas of video instruction merit attention in future work.

## Media Attributes Research

Since the television first made its way into American households, a new generation of "TV literate" teachers has filtered into public schools. Familiarity with the medium, however, did not guarantee its success in the classroom. Each advance in technology creates a very real need for research and training to realize the medium's instructional potential.

Empirical research on instructional video, however, has done little to reach into the classroom as a basis for design. Florio (1986) states, "For the most part, schools have responded to the technology revolution as they have in the past. They isolated the intervention in separate laboratories. . . Instructional use was narrow and limited to a few students (p. 3)." This isolation has been apparent in a forty year stream of "media attributes" experiments designed to test the cognitive impact of video.

Media "attributes" are those production techniques unique to a specific medium (e.g., camera work in video). Those elements become the "symbol system" that the medium uses to portray phenomena (Oltman, 1983). Video's symbol system determines the mental effects any viewer may experience. Thus, video structures information and presents it in its own unique way (Salomon,1979). These symbols can differ in the amount of mental translation they demand to convert an external image into an internal representation of the event (Arnheim, 1974). The symbols may differ in the kinds of cognitive skills they invoke in this process, requiring mere comprehension of information or more creative/critical thinking (Oltman, 1983).

Since the 1950's, a series of studies has examined most of the production areas of instructional video.[1] Production techniques in every area of video design have been positively associated with learning, including the use of color, motion, humor, text organization devices, music, sound effects, changes of scene, characters, themes, and sound, and camera zooms, tilts, and pans. The techniques were tested for their impact on long and short term memory and learners of various ability levels and age groups. However, the potential drawbacks of these studies may outweigh any advantages they provide in controlling the learning process. Investigators have objections not only to the design of the studies, but the philosophical base on which they rest.

Clark (1983) argues that a media attribute approach is not supported by work in cognitive psychology, and that the techniques tested are actually characteristic of many media. Salomon and Clark (1986) reviewed the evidence of several studies and found that no one attribute specific to any medium proved to be "necessary" to learning any cognitive skill. Wagner and Wishon (1987) state that media research tends to view video with a "magic bullet" philosophy, presupposing no interaction on the part of the learner. Indeed, the experimental designs of such research cannot hope to duplicate the normal classroom learning environment. Too many typical distractions and other factors affecting learning are controlled in an experimental design.

These distractions may not affect only the students, but the instructors trying to use the medium too. Economic and administrative structures within the educational system may create barriers to technology use that eventually affect the teacher's attitude in the classroom. A second strand of study has suggested a more systemic approach to the dilemmas surrounding the use of technology in schools.

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[1] Allen, 1973; Allen, 1975; Beck, 1987; Blake, 1977; Bovy, 1983; Collins, 1975; Dwyer, 1978; Fleming & Levie, 1978; Glynn & Britton, 1984; Gropper, 1986; Hart, 1986; Hartley & Burnhill, 1977; Hoban and van Ormer, 1950; Horn, 1976; Lamberski, 1980; May, 1965; May & Lumsdaine, 1958; Morris, 1988; National Institute of Mental Health, 1982; Pezdek & Miceli, 1982; Salomon, 1979; Saul, 1954; Seidman, 1981; Severin, 1967; Showstack, 1982; Travers, 1967; Wilson, Pfister, & Fleury, 1981; Wood & Dwyer, 1989; and Zettl, 1973.

Seidman (1985) found that teachers who chose to employ a variety of media, especially videotape, expressed more positive attitudes about their profession and dealt better with job-related stress. When equipment use was mandated, teachers felt less in control of curricula and experienced higher degrees of "burnout." Video, a medium highly demanding of time and effort in its use, may put additional pressure on teacher initiative.

The criticism of school systems is that new advances in technology are seldom accompanied by an organized approach to implementation. In fact, according to Kemp and Smellie (1989), "Subject content is the basis for planning, and only casual attention is given to other details." McLean (1985) found that the most frequently consulted information source about video may be vendors and consultants rather than designers or researchers. The result is that another "educational fad" is thrust upon teachers who have no training in classroom media use.

This may lead to mistrust of the video industry among teachers. Schrock (1985) reported that teachers participating in an instructional design project were soured on the field. One teacher commented that "the consultants are like evangelists-- giving a sales pitch (p. 13)." This suspicion has even filtered down to school media specialists. As early as 1981, Willis found that teachers believed that though these personnel could help select materials, they were not qualified in how to use materials in the classroom. Day and Scholl (1987) echoed this concern that academic consultants may be too far removed from the classroom to assist teachers using instructional technology.

The industry itself is partially to blame for the skepticism over video and its designers. Despite the volume of empirical work on instructional video, those directly involved in production know little about what goes into instructional design and planning (Kemp and Smellie, 1989; Tucker, 1986; McLean, 1985). Gayeski (1989) states that the lack of research utilization on the production level results in poor quality programming which may eventually push the medium into the closet.

As a result, many experts propose measures to provide support systems for teachers seeking to employ media. Day and Scholl (1987) believe that "enabling factors" such as updating records, quality screening, and periodic survey of teachers are an important influence on media use. Lewis (9185) suggests more use of software "clearinghouses." Wedman's (1988) "Performance Engineering Model" holds that administrators, consultants, and specialists should all provide information, procedures, and incentives for using media. Field (quoted in Technology and the faculty, 1987) leaves the task up to administrators to provide time, expert assistance, and rewards to teachers using media. This call is echoed by Florio (1986), Lipson (1981), and Seidman (1985). Mertens goes so far as to suggest construction of "media centers" in schools and teacher training colleges. He also outlines a specific course in media use.

These measures may do much to empower teachers with technology, but it may be too late in the instructional development process to be of any use. Media do require that teachers sacrifice their traditionally central role in the learning process (Coder, 1983). For instructors who have been the most important source of information and learning, control over how media symbols present and structure information is still a primary concern.

It seems clear that attributes research can study the medium, but it cannot effectively duplicate the classroom setting. Institutional approaches to technology may not intervene soon enough to give the teacher any control over design. As long as teachers have a means to voice their needs from the medium, this is not a problem. Such a voice does not exist, however. As Moore and Hunt (1980) point out, "The less faculty involvement and understanding of any proposed innovation. . .the more the chance of resistance and the lack of success of the proposed innovation (p. 142)."

The answer is to give teachers a voice in what Gayeski (1989) calls "participatory design." Teachers do have a supplemental role in mind for video (Technology and the faculty, 1987), so there may be some indication that they know what types of design will work best. Lewis (1985) states teachers should be consulted to identify problem concepts

or procedures in their field, or "instructional bottlenecks." Once these bottlenecks are determined, teachers and designers can work for new instructional strategies in video programs. Both Florio (1986) and Beal (1981) seem to parallel this concern for leaving teachers some control over instructional design.

A pilot survey was designed to gather preliminary data on three questions: 1) What need are classroom teachers trying to fulfill with instructional video? 2) What design features are best suited to fulfilling these needs? 3) Do current productions possess these features and, therefore, meet these needs? Instructors from eight Colorado high schools responded to this survey, from which data was used to chart new directions for investigation of video with practicing classroom instructors.

Questionnaire items in each of the three content areas sought to gauge both instructor attitude and use patterns for instructional videotape. The first content area asked teachers to state how far video instruction could go in teaching complex cognitive objectives. Items in this area also asked them to select specific goals for which they wished to use more video. The second content area provided teachers with lists of production features regarding the organization of the video's information, the design of its lesson, and the production techniques used in the program. Instructors ranked these items on a one to five scale of importance to learning. The third content objective asked how often teachers saw each of these techniques. When compared with instructor ratings of the importance of these features, the survey could make a preliminary estimate on teacher satisfaction with video productions. The final objective area also asked how often teachers are able to find acceptable productions for classroom use and what criteria are most important in selecting these productions.

Prior to writing the first draft of the survey, focused interviews were conducted with media specialists in six of the eight participating schools. The purpose of these interviews was to insure accurate wording of potentially jargonistic terms and to probe for any additional factors or criteria which may have influenced the selection or use of video by

teachers. When the survey was constructed, items were included that would help break down responses according to five demographic factors: primary subject of instruction, numbers of years teaching, amount of previous instructional media training, and frequency of video use.

Participation requests were mailed to schools randomly chosen from the 1989-1990 public school directory from the Colorado Department of Education. To compensate for differences among larger or smaller districts, schools were selected evenly from five enrollment levels: 0-150, 151-250, 251-500, 501-1000, and 1001 or more students. After pilot testing of the instrument with teachers in the smallest schools, seven others participated in the study. Six of these schools had between 250-1000 students. Surveys were initially distributed either by direct mail or at faculty meetings. The second distribution of surveys was only through faculty meetings. In both cases, surveys were returned by direct mail.

Of the 275 instructors employed by the eight schools, 97 returned surveys. Of this number a clear majority were from schools in the medium-sized schools. The overall return was approximately 35%, but the return rate from medium-sized schools was 52%. The subject area breakdown was as follows: social science--12, language arts--17, mathematics--15, science--15, physical education--7, vocational education--16, and other courses--15.

Because of the exploratory purpose of the survey and the relatively small sample size, data analysis was restricted to descriptive measures. Responses to the first content area were compiled with SPSS-PC FREQUENCIES and CROSSTABS tests. Responses were compared with demographic factors using the same tests. MEANS tests were used to compile teacher ratings of importance of and satisfaction with specific video design features.

The results of this analysis, albeit from a small sample, shed some interesting light on further directions for research on instructional video. Teacher attitudes toward the

medium, on the surface, do not seem to influence the goals set for its use in the classroom. When these attitudes are explored on deeper levels, specifically regarding the organization, lesson, and production design of the program, teachers express a much different view. While video can put together complex production designs, it may not teach students very effectively.

Initial attitudes regarding video's ability to teach students are positive (table 1). When respondents were asked to indicate the level of cognitive complexity video could teach (survey item 6), 63% of them stated that the medium could reach some or all levels of complex thought. While the largest percentage of teachers (37%) believed that video could only be used for low order thinking, this view of instructional video seems positive on the surface.

When this attitude is compared with the goals for which teachers desire to use more video (survey items 10 and 11), the results seem to contradict this initial finding. Table 2 presents the mean rating of video's "cognitive reach" from teachers either desiring or not desiring to use the medium to fulfill several suggested objectives. Among the goals common to a majority of teachers (reaching visual learners, stimulating discussion, establishing teaching variety, showing real-life applications of the topic, introducing new topics, and motivating students), none can be primarily associated with high-order cognitive skills such as problem-solving or critical thinking. In fact, many could be seen as only exposing students to new information and preparing them for later, more complex thought.

Additionally, if the rating of the medium's cognitive reach were much higher among teachers wanting to use video for complex thought, teachers' initial attitudes toward the medium could be related to their use of it. However, this is not the case. The mean ratings of video's cognitive reach are not significantly different (0.5 or greater) between teachers desiring and not desiring more video to attain each suggested goal. For example, those

teachers wishing to use more video to teach creative thinking were not more likely to feel that video was more capable of teaching complex thought.

Another possible check on instructor attitude toward video lies in their perceptions of how students approach classroom tapes, seeing them as an opportunity for learning or entertainment (survey items 7-9). When teachers were asked to judge how students of various ability levels view the medium (table 3), the results were pronounced. High-ability learners were predominantly seen as seeking learning, while average and low ability learners were seen as "entertainment seekers" when watching instructional television.

If this initial attitude had any influence over the use of video in the classroom, then we would expect to find that teachers desiring to use video for complex cognitive objectives would also be those who feel that students seek learning from video. Correlation tests (table 4), however, yielded no significant correlation between using video for low- or high-order thinking and the ability level of the student. Teachers who believed video could teach complex thought were just as likely to think that high-ability students sought learning or entertainment from a video production. In this case, even teacher perception of student attitude toward videos does not seem to influence the goals set for the medium's use.

The current uses of video in school curricula seem to rely primarily on two inherent qualities of the medium: to expose students to phenomena outside the classroom and to teach skills which rely primarily on visual dimensions for successful performance. Over three quarters of respondents (table 1) indicated a desire to use video to show real-life applications of the topic at hand. The medium's ability to "take the viewer out of the classroom" is still one of its biggest advantages.

Instructors also rated the medium's ability to teach actual skills to students as a primary condition for its usefulness in class. Table 5 shows teachers' satisfaction with video's ability to meet the same suggested objectives (survey items 12 and 13). The ratings are divided by those instructors frequently or infrequently able to find acceptable tapes for classroom use (survey item 4). Frequent finders were much more satisfied with the

medium's ability to teach students skills, especially physical and spatial skills. Since both physical and spatial skills (such as wood sanding or work with shapes and figures) rely primarily on visual elements for successful performance, it would seem that video's ability to picture content in creative ways is another advantage of the medium.

Teachers' initial positive attitudes toward video's cognitive reach do not seem to correlate with their use of the medium for mostly low-level cognitive objectives. If instructors believe the medium can teach complex thought, use of video to teach those processes would be an expected desire. The reason for this apparent contradiction can be discovered through a deeper analysis of these perceptions of instructional video.

When respondents were asked to rate the importance of various design features to learning (survey items 14, 16, and 18), and were then asked to rate their satisfaction with current productions' use of those features (survey items 15, 17, and 19), one interesting trend was noted. Teachers rated features of content organization and lesson design (such as structural clarity or provision of student practice and feedback) as more important to learning than production features (such as camera or sound work). However, they expressed more satisfaction with production features than with either content organization or lesson design features.

Teachers were first given suggested design features in each area and asked to rank the features' importance to learning on a scale of one ("never important") to five ("always important"). In each area, several features were rated as being more than "sometimes" important (3.5 or higher). By far the most significant features are related to the organization of information (table 6). Only one feature, the use of experts to illustrate or explain content, was seen as less than sometimes important to learning. Respondents felt that clarity of organization and the use of scenes to illustrate or explain content were most important to learning.

In slight contrast, only two features of lesson design (table 7) were seen as more than sometimes important learning. Teachers believed that it was "usually" or "always"

important for the video's content to go beyond material already covered in text or lecture, and that this material should be objectively presented. Teachers did not believe that providing questions, practice, and feedback for the students was a important to the video's lesson design. Nor did they feel that the program should even provide supplementary materials for the instructor's use. All these features would seem to make it easier for the video to encourage more complex thought on the viewer's part.

The least significant features to learning are found in teachers'' ratings of production features (table 8). Of the categories suggested, only the use of presentation elements such as drama and humor were seen by respondents as more than sometimes important to learning. The treatment of the subject was fare more significant than the manner in which it was visually or audibly recorded. The use of graphics and special effects in the program was seen as less than sometimes important as well.

From the ratings in these three design areas, we can see that teacher hold more concern for the actual content of the program and the structure of that information for the listener. Concerns for lesson design center only on the depth and objectivity of that information. Elements of production design seem to hold little significance for teachers. When these ratings are compared to satisfaction with design elements, however, the opposite seems to be true. The design area least important to learning earned the highest comparative satisfaction ratings from instructors.

When teachers were asked to rate their satisfaction with elements in these three areas, their attitudes toward the medium were less positive. Table 9 shows the frequency of teacher responses about how often they can find an acceptable production for the classroom (survey item 4). About 69% stated that they found video infrequently (never, seldom, or sometimes found a tape or just never sought out tapes). Only thirty respondents reported either usually or always finding a production to suit their needs in the classroom.

When presented with a list of possible factors governing the selection of available programs (survey item 5), teachers cited only four factors that were more than sometimes

important (rated 3.5 or higher) when selecting or rejecting videotapes (table 10). "Infrequent finders" rated these factors as importantly as "frequent finders." The two most significant are the quality of current productions and the appropriateness of information contained within the program. Beyond considerations of production quality, many teachers (even specialists in the focused interviews) expressed concerns over the "age-level" to which videos directed their material. Anything too far above or below the students runs the risk of losing their interest. Other concerns included the suitability of current curricula to the use of video, the medium's usefulness in the classroom, and the selection or variety of materials available. In short, current productions' connections with school curricula is a significant question mark to teachers in this study.

In the satisfaction ratings of individual design techniques (survey items 15, 17, and 19), teachers seem to express their most specific concerns about instructional video (table 11). In the categories of organizational and lesson design, all features received lower ratings than previous items assessing their importance to learning. In other words, teachers in the total sample believed several of these design features to be important to learning, but did not see video make use of them as often as they wished. Indeed, teachers observed only four features in these categories more than some of the time (mean ratings of 3.5 or higher on a scale of 5): use of scenes to illustrate content, clarity of content organization, achievement of a theme in the production, and expansion of material beyond text or lecture. Even in these cases, the previous ratings of their importance to learning was higher.

In the case of production features, however, the opposite seemed to be true. Three of the five features (camera work, sound, and graphics) received higher ratings for satisfaction than for their importance to learning (table 8). It should be noted, however, that only one of these elements received a rating that indicated more than "sometime satisfaction." The use of presentation elements such as humor and drama was rated more favorably in this regard. In this case, though, the importance of this factor to learning received a higher mean score from teachers. It would seem then, that teachers may

consider the production design of video, though its quality is of some concern, to be a secondary goal in the education of students.

Later in the questionnaire (Appendix B, p.7), respondents were asked to indicate the balance they preferred between dichotomous pairs of production techniques (black and white versus color, for example). This preference was marked on a continuum of one to seven. A perfect balance of the two techniques was assigned the number four. Table 12 shows the mean scores for the total sample and subject areas. Four of the features display a marked difference from the neutral point (greater than 5.5 or less than 2.5) in the total sample's ratings: use of color, motion, music, and dramatic forms. These scores indicate a strong preference for the use of the elements in instructional video.

This combination of specific production techniques may increase the pace and visual variety of the production. Indeed, with the addition of music and dramatic forms, such productions more closely resemble entertainment forms of television. Media specialists, in focused interviews, referred to a "music video mentality" that students seemed to expect from any form of television they viewed. The goal of the program did not seem to affect this expectation in teachers' views. The use of these four specific techniques would bring instructional television more in line with the same programs students view in their time outside the school.

Taken together then, teachers' satisfaction with video's use of organizational, lesson, and production design elements seems to indicate a mistrust of a medium used for non-traditional purposes. Respondents seem more comfortable with the medium's ability to put together a slick production and expose students to new places and things; they seem less comfortable with the medium's ability to teach students with any significant impact. The content and structure of the video is more important to teachers, but they do not seem as satisfied with it; and though they are somewhat satisfied with production designs, the impact of production on learning is not seen as being very significant.

This attitude may be further evidenced by the study's comparison of design satisfaction with respondents' ability to find acceptable videos for classroom use (table 13). This test compares the mean satisfaction ratings of infrequent and frequent finders of videotapes on each design feature. If frequent finders are markedly more satisfied (mean scores at least 0.5 greater than infrequent finders), then this design element may have some bearing on teacher selection of videos.

However, only one feature, quality of sound work, showed such a difference in ratings among the two groups. In short, if all teachers are dissatisfied with the design of video, then satisfaction with design work may not be a selection criterion. The teacher may simply decide not to use the medium or put in additional work to prepare the video for classroom use.

Of course, it is possible that these ratings of each of the design features will vary from one curriculum area to the next. It is possible that mathematics teachers will consider some features more or less critical and/or satisfactory than teachers in other subjects. This would certainly seem true by looking at the results of this study (tables 6-8 and 11). When importance and satisfaction ratings are broken down by subject area, we can see that teachers in each area place varying emphases on individual components of an instructional video.

Science, social science, language, and vocational education instructors in this survey most frequently presented markedly different ratings of these features. For example, social science teachers rated the importance of design elements much higher in all facets of organization and lesson design (tables 6 and 7). With these teachers, four factors approach significant importance (ratings of 3.5 or higher), compared with only two such factors among the total sample. Each subject area, though, presents its own variations from the ratings of the total sample. With such a small sample, though, it is difficult to tell if these variations are accurate enough to give us insight on designing productions tailored to the specific subject area.

All of these findings may be a necessary first step in identifying the "instructional bottlenecks" that Lewis (1985) felt would give teachers some control over the design and content of instructional video. This study's results seem to indicate that although teachers, on the surface, believe that it is possible to teach many types of thinking with video, these same instructors still hold a critical eye toward the medium's specific strategies for doing so. In other words, video may be able to present a pleasant image to expose and motivate students, but it may not be able to teach effectively.

In essence, further research with classroom instructors and instructional video should consider two possible lines of inquiry. The first set of questions centers on the difference teachers may see between video's ability to capture attention and its capacity to teach. Perhaps the results of this survey indicate that teachers feel these two goals to be separate ends--impossible to attain within one lesson. Perhaps teachers do not see video as a medium that can encourage the interaction needed to effectively engage and instruct students. Another concern of further research might consider asking classroom teachers exactly what high-order skills include and the extent of video's ability to teach these skills to students.

A secondary line of inquiry might center on the needs and use patterns of teachers in various subject areas when it comes to instructional video. Do these subject areas share common instructional goals? Should these common goals be treated differently in instructional videos? If so, focused research could gather teachers' opinions on the differences between subjects, what makes some better suited to video than others, and what concepts present special challenges to instructors in each subject area.

Through this additional investigation, at least one facet of educational technology may be making more strides toward true integration of curricula, students, and teachers. It may be that teachers' perspectives on the nature of this medium are more necessary than we previously thought to make video a valuable part of the modern classroom. By giving classroom instructors more control over the use of the medium, we may eventually see

students that are as "media literate" as they are "computer literate." Everyone involved in the learning process might learn not only more about their own subject, but about the channel through which it is communicated.

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# Appendix A:

# Results of Data Analysis

Table 1: Video's ability to teach complex cognitive skills.

| Video can teach. . . | Frequency | Percent | Mean |
|---|---|---|---|
| no cognitive skills | 0 | 0.0 | |
| only simple cognitive skills | 34 | 37.0 | |
| some, but not all, complex cognitive skills | 33 | 35.0 | |
| all levels of cognitive skills | 26 | 28.0 | |
| TOTAL | 93 | 96.0 | 2.91 |

Note: Four missing cases were not tabulated for this item.

Table 2: Video's "cognitive reach" by goals and desire to use video.

| Suggested Goal/Skill | Desiring More Video | | | Not Desiring More Video | | | Difference (n = 93) |
|---|---|---|---|---|---|---|---|
| | mean | cases | % | mean | cases | % | |
| Teach new content | 3.21 | 29 | 31.2 | 2.77 | 64 | 68.8 | 0.44 |
| **Reach visual learners** | **3.08** | **48** | **51.6** | **2.71** | **45** | **48.4** | **0.37** |
| Emphasis of theme/topic | 3.17 | 24 | 25.8 | 2.81 | 69 | 74.2 | 0.36 |
| Teach creative thinking | 3.10 | 41 | 44.1 | 2.75 | 52 | 55.9 | 0.35 |
| Teacher unfamiliarity | 3.13 | 32 | 34.4 | 2.79 | 61 | 65.6 | 0.34 |
| **Stimulate discussion** | **3.02** | **50** | **53.8** | **2.77** | **43** | **46.2** | **0.25** |
| Reinforce abstract ideas | 3.02 | 42 | 45.2 | 2.80 | 51 | 54.8 | 0.22 |
| **Method variety** | **3.00** | **51** | **54.8** | **2.79** | **42** | **45.2** | **0.21** |
| *Teach verbal skills | 3.05 | 21 | 22.6 | 2.86 | 72 | 77.4 | 0.19 |
| Show current issues | 3.00 | 43 | 46.2 | 2.82 | 50 | 53.8 | 0.18 |
| **Real-life applications** | **2.94** | **71** | **76.3** | **2.77** | **22** | **23.7** | **0.17** |
| *Teach analytical skills | 3.00 | 38 | 40.9 | 2.84 | 55 | 59.1 | 0.16 |
| *Teach problem solving | 2.98 | 45 | 48.4 | 2.83 | 48 | 51.6 | 0.14 |
| *Teach spatial skills | 3.00 | 23 | 24.7 | 2.87 | 70 | 75.3 | 0.13 |
| Simulation/demonstration | 2.96 | 45 | 48.4 | 2.85 | 48 | 51.6 | 0.10 |
| *Teach affective skills | 2.97 | 31 | 33.3 | 2.87 | 62 | 66.7 | 0.10 |
| **Introduction of topic** | **2.93** | **54** | **58.1** | **2.87** | **39** | **41.9** | **0.05** |
| *Teach numerical skills | 2.94 | 18 | 19.4 | 2.89 | 75 | 80.7 | 0.05 |
| **Motivation of students** | **2.90** | **52** | **55.9** | **2.90** | **41** | **44.1** | **0.00** |
| *Teach physical skills | 2.87 | 15 | 16.1 | 2.91 | 78 | 83.9 | -0.04 |
| *Teach procedural skills | 2.83 | 18 | 19.4 | 2.92 | 75 | 80.7 | -0.09 |
| Summary of course content | 2.83 | 29 | 31.2 | 2.94 | 64 | 68.8 | -0.11 |

Note. 1 = video can teach no cognitive skills effectively, 4 = video teaches simple and complex skills effectively. * denotes specific skills taught to students. Goals/ skills desired by 50% or more teachers are listed in boldface.

Table 3: Frequency counts for learners' attitudes toward instructional video.

| learner ability level | seeks entertainment | seeks learning | neither | (n=97) TOTAL |
|---|---|---|---|---|
| High | 21 (21.6%) | 50 (51.5%) | 20 (20.6%) | 91 (93.82%) |
| Average | 58 (59.8%) | 27 (27.8%) | 8 (8.2%) | 93 (95.88%) |
| Low | 84 (86.6%) | 4 (4.1%) | 6 (6.2%) | 94 (96.91%) |

Note. Missing Cases: High ability--6 Average ability--4 Low ability--3

Table 4: Desired video goals by sample and teacher perception of student ability.

| Suggested Goal/Skill (No. of reponses) | Sample Mean (n=97) | High-ability Mean (n=91) | Avg.-ability Mean (n=93) | Low-ability Mean (n=94) |
|---|---|---|---|---|
| Show real-life applications | .7629 | .7692 | .7634 | .7660 |
| Introduction of topic | .5670 | .5714 | .5806 | .5851 |
| Establish method variety | .5464 | .5385 | .5376 | .5426 |
| Motivation of students | .5360 | .5385 | .5484 | .5532 |
| Stimulate discussion | .5258 | .5275 | .5269 | .5319 |
| Reach "visual learners" | .5052 | .5165 | .5161 | .5213 |
| Simulation/demonstration | .4845 | .5055 | .4946 | .5000 |
| Teach problem solving | .4845 | .4835 | .4839 | .4894 |
| Show current issues | .4536 | .4725 | .4731 | .4681 |
| Reinforce abstract ideas | .4433 | .4505 | .4409 | .4468 |
| Teach creative thinking | .4227 | .4176 | .4194 | .4255 |
| Teach analytical skills | .3918 | .4066 | .3978 | .4043 |
| Compensate for teacher unfamiliarity | .3402 | .3187 | .3333 | .3404 |
| Teach affective skills | .3299 | .3297 | .3333 | .3404 |
| Teach new content | .3196 | .2967 | .3011 | .3085 |
| Summary of content | .3092 | .2967 | .3118 | .3191 |
| Emphasize theme/topic | .2474 | .2527 | .2473 | .2553 |

Note. 1 = desire to use more video for the goal, 0 = no desire to use more video.

Table 5: Satisfaction with video's ability to achieve goals by ability to find video.

| Factor | Infrequent finders mean | cases | % | Frequent Finders mean | cases | % | Difference (n = 82) |
|---|---|---|---|---|---|---|---|
| 1) Teach physical skills | 1.18 | 39 | 59.1 | 2.19 | 27 | 40.9 | (n=66) 1.01 |
| 2) Teach creative thinking | 2.41 | 39 | 59.1 | 3.07 | 27 | 40.9 | (n=66) 0.66 |
| 3) Teach spatial skills | 1.95 | 40 | 59.7 | 2.56 | 27 | 40.3 | (n=67) 0.61 |
| 4) Teach affective skills | 2.38 | 39 | 59.1 | 2.96 | 27 | 40.9 | (n=66) 0.58 |
| 5) Reach "visual" learners | 2.97 | 39 | 58.2 | 3.54 | 28 | 41.8 | (n=67) 0.57 |
| 6) Teach new content | 2.78 | 40 | 58.0 | 3.28 | 29 | 42.0 | (n=69) 0.50 |
| 7) Summarize content | 2.85 | 40 | 58.0 | 3.31 | 29 | 42.0 | (n=69) 0.46 |
| 8) Stimulate discussion | 3.05 | 41 | 58.6 | 3.45 | 29 | 41.4 | (n=70) 0.40 |
| 9) Compensate for unfamiliarity | 2.33 | 40 | 58.8 | 2.71 | 28 | 41.2 | (n=68) 0.39 |
| 10) Teach procedural skills | 2.13 | 39 | 60.0 | 2.50 | 26 | 40.0 | (n=65) 0.37 |

Note. 1 = never, 2 = seldom, 3 = sometimes, 4 = usually, 5 = always. Fourteen respondents who stated they did not seek any video for classroom use were asked not to complete these survey items. Therefore, the number of cases (n) equals the number of actual versus expected responses to these items.

Table 6: Importance of content organization and support by total sample and subject areas.

| Sample (n=70/83, 84.3%) | Mean |
|---|---|
| 1) Clarity of organization | 4.0725 |
| 2) Use of scenes to illustrate content | 3.9559 |
| 3) Preview/summary of material | 3.7500 |
| 4) Achievement of a theme | 3.7391 |
| 5) Ability to show video in one session | 3.6429 |
| 6) Use of experts to illustrate content | 3.3913 |

| Social science teachers (n=12/12, 100%) | Mean |
|---|---|
| 1) Clarity of organization | 4.1818 |
| 2) Use of scenes to illustrate content | 4.0909 |
| 3) Use of experts to illustrate content | 4.0909 |
| 4) Preview/summary of material | 4.0000 |
| 5) Achievement of a theme | 3.9091 |
| 6) Ability to show video in one session | 3.8182 |

| Physical education (n=6/7, 85.7%) | Mean |
|---|---|
| 1) Ability to show video in one session | 4.0000 |
| 2) Use of scenes to illustrate content | 4.0000 |
| 3) Achievement of a theme | 3.8333 |
| 4) Preview/summary of material | 3.8000 |
| 5) Clarity of organization | 3.5000 |
| 6) Use of experts to illustrate content | 2.3333 |

| Mathematics (n=6/7, 85.7%) | Mean |
|---|---|
| 1) Clarity of organization | 4.3333 |
| 2) Ability to show video in one session | 3.8333 |
| 3) Preview/summary of material | 3.5000 |
| 4) Use of scenes to illustrate content | 3.5000 |
| 5) Achievement of a theme | 3.3333 |
| 6) Use of experts to illustrate content | 3.3333 |

| Science (n=11/13, 84.6%) | Mean |
|---|---|
| 1) Use of scenes to illustrate content | 4.0000 |
| 2) Clarity of organization | 3.8182 |
| 3) Ability to show video in one session | 3.6364 |
| 4) Preview/summary of material | 3.5455 |
| 5) Achievement of a theme | 3.4545 |
| 6) Use of experts to illustrate content | 3.0909 |

| Language/literature/speech (n=13/16, 81.3%) | Mean |
|---|---|
| 1) Use of scenes to illustrate content | 4.0769 |
| 2) Clarity of organization | 4.0769 |
| 3) Achievement of a theme | 4.0000 |
| 4) Use of experts to illustrate content | 3.6154 |
| 5) Preview/summary of material | 3.5385 |
| 6) Ability to show video in one session | 3.3077 |

| Vocational studies (n=10/13, 76.9%) | Mean |
|---|---|
| 1) Preview/summary of material | 4.1111 |
| 2) Clarity of organization | 4.0000 |
| 3) Ability to show video in one session | 3.9000 |
| 4) Achievement of a theme | 3.7778 |
| 5) Use of scenes to illustrate content | 3.6667 |
| 6) Use of experts to illustrate content | 3.2222 |

| Electives (n=13/15, 86.7%) | Mean |
|---|---|
| 1) Clarity of organization | 4.3846 |
| 2) Use of scenes to illustrate content | 4.0769 |
| 3) Preview/summary of material | 3.7500 |
| 4) Achievement of a theme | 3.6923 |
| 5) Use of experts to illustrate content | 3.4615 |
| 6) Ability to show video in one session | 3.3846 |

Note. 1 = never important, 2 = seldom important, 3 = sometimes important, 4 = usually important, 5 = always important. Fourteen respondents who stated they did not seek any video for classroom use were asked not to complete these survey items. Therefore, the number of cases (n) equals the number of actual versus expected responses to these items.

Table 7: Importance of lesson design--means for the sample and subjects.

| Sample (n=70/83, 84.3%) | Mean |
|---|---|
| 1) Expansion of video beyond text/lecture material | 3.9429 |
| 2) Objectivity of content treatment | 3.7536 |
| 3) Provision of task directions for students | 3.2121 |
| 4) Use of questions and student feedback in the video | 3.2029 |
| 5) Provision of supplementary materials for instructor | 3.1912 |
| 6) Ability for teacher to control pace of the video | 2.8333 |

| Social science teachers (n=12/12, 100%) | Mean |
|---|---|
| 1) Expansion of video beyond text/lecture material | 4.2500 |
| 2) Objectivity of content treatment | 4.0833 |
| 3) Use of questions and student feedback in the video | 3.6364 |
| 4) Provision of supplementary materials for instructor | 3.6364 |
| 5) Provision of task directions for students | 3.4545 |
| 6) Ability for teacher to control pace of the video | 3.1818 |

| Physical education (n=6/7, 85.7%) | Mean |
|---|---|
| 1) Expansion of video beyond text/lecture material | 3.3333 |
| 2) Objectivity of content treatment | 3.6667 |
| 3) Use of questions and student feedback in the video | 3.0000 |
| 4) Provision of task directions for students | 2.6667 |
| 5) Provision of supplementary materials for instructor | 2.5000 |
| 6) Ability for teacher to control pace of the video | 2.3333 |

| Mathematics (n=6/7, 85.7%) | Mean |
|---|---|
| 1) Expansion of video beyond text/lecture material | 4.2000 |
| 2) Objectivity of content treatment | 3.6000 |
| 3) Use of questions and student feedback in the video | 3.6000 |
| 4) Provision of task directions for students | 3.4000 |
| 5) Provision of supplementary materials for instructor | 3.2000 |
| 6) Ability for teacher to control pace of the video | 3.2000 |

| Science (n=11/13, 84.6%) | Mean |
|---|---|
| 1) Expansion of video beyond text/lecture material | 3.7273 |
| 2) Objectivity of content treatment | 3.5455 |
| 3) Provision of task directions for students | 3.1111 |
| 4) Use of questions and student feedback in the video | 2.9091 |
| 5) Ability for teacher to control pace of the video | 2.6667 |
| 6) Provision of supplementary materials for instructor | 2.6000 |

| Language/literature/speech (n=13/16, 81.3%) | Mean |
|---|---|
| 1) Expansion of video beyond text/lecture material | 4.1538 |
| 2) Objectivity of content treatment | 3.4615 |
| 3) Provision of supplementary materials for instructor | 3.2308 |
| 4) Use of questions and student feedback in the video | 3.1538 |
| 5) Provision of task directions for students | 3.0000 |
| 6) Ability for teacher to control pace of the video | 2.8462 |

| Vocational studies (n=10/13, 76.9%) | Mean |
|---|---|
| 1) Expansion of video beyond text/lecture material | 4.0000 |
| 2) Objectivity of content treatment | 3.8889 |
| 3) Provision of task directions for students | 3.8889 |
| 4) Provision of supplementary materials for instructor | 3.0000 |
| 5) Use of questions and student feedback in the video | 2.8000 |
| 6) Ability for teacher to control pace of the video | 2.7778 |

| Electives (n=13/15, 86.7%) | Mean |
|---|---|
| 1) Objectivity of content treatment | 3.9231 |
| 2) Expansion of video beyond text/lecture material | 3.7692 |
| 3) Provision of supplementary materials for instructor | 3.6923 |
| 4) Use of questions and student feedback in the video | 3.3846 |
| 5) Provision of task directions for students | 3.0000 |
| 6) Ability for teacher to control pace of the video | 2.7692 |

Note. 1 = never important, 2 = seldom important, 3 = sometimes important, 4 = usually important, 5 = always important. Fourteen respondents who stated they did not seek any video for classroom use were asked not to complete these survey items. Therefore, the number of cases (n) equals the number of actual versus expected responses to these items.

Table 8: Influence of production techniques over learning by sample and subject

| Sample (n=70/83, 84.3%) | Mean |
|---|---|
| 1) Presentation elements (drama, humor, etc.) | 3.7101 |
| 2) Sound elements (soundtrack, music, etc.) | 3.0147 |
| 3) Graphic elements (use of titles, arrows, etc.) | 2.9275 |
| 4) Use of special effects or animation | 2.8971 |
| 5) Camera elements (angle of shot, etc.) | 2.4857 |

| Social science teachers (n=12/12, 100%) | Mean |
|---|---|
| 1) Presentation elements (drama, humor, etc.) | 4.0909 |
| 2) Sound elements (soundtrack, music, etc.) | 3.0000 |
| 3) Use of special effects or animation | 3.0000 |
| 4) Graphic elements (use of titles, arrows, etc.) | 2.5833 |
| 5) Camera elements (angle of shot, etc.) | 2.2500 |

| Physical education (n=6/7, 85.7%) | Mean |
|---|---|
| 1) Presentation elements (drama, humor, etc.) | 3.6667 |
| 2) Sound elements (soundtrack, music, etc.) | 3.0000 |
| 3) Graphic elements (use of titles, arrows, etc.) | 2.8333 |
| 4) Camera elements (angle of shot, etc.) | 2.8333 |
| 5) Use of special effects or animation | 2.6667 |

| Mathematics (n=6/7, 85.7%) | Mean |
|---|---|
| 1) Presentation elements (drama, humor, etc.) | 3.6000 |
| 2) Use of special effects or animation | 3.0000 |
| 3) Camera elements (angle of shot, etc.) | 3.0000 |
| 4) Graphic elements (use of titles, arrows, etc.) | 2.8000 |
| 5) Sound elements (soundtrack, music, etc.) | 2.6000 |

| Science (n=11/13, 84.6%) | Mean |
|---|---|
| 1) Use of special effects or animation | 3.5455 |
| 2) Presentation elements (drama, humor, etc.) | 3.1818 |
| 3) Graphic elements (use of titles, arrows, etc.) | 3.0909 |
| 4) Camera elements (angle of shot, etc.) | 2.7273 |
| 5) Sound elements (soundtrack, music, etc.) | 2.5455 |

| Language/literature/speech (n=13/16, 81.3%) | Mean |
|---|---|
| 1) Presentation elements (drama, humor, etc.) | 4.0769 |
| 2) Sound elements (soundtrack, music, etc.) | 3.6923 |
| 3) Graphic elements (use of titles, arrows, etc.) | 2.9231 |
| 4) Camera elements (angle of shot, etc.) | 2.3846 |
| 5) Use of special effects or animation | 1.9231 |

| Vocational studies (n=10/13, 76.9%) | Mean |
|---|---|
| 1) Presentation elements (drama, humor, etc.) | 3.4000 |
| 2) Use of special effects or animation | 3.4000 |
| 3) Graphic elements (use of titles, arrows. etc.) | 3.1000 |
| 4) Sound elements (soundtrack, music, etc.) | 3.0000 |
| 5) Camera elements (angle of shot, etc.) | 2.1000 |

| Electives (n=13/15, 86.7%) | Mean |
|---|---|
| 1) Presentation elements (drama, humor, etc.) | 3.7692 |
| 2) Graphic elements (use of titles, arrows, etc.) | 3.0833 |
| 3) Sound elements (soundtrack, music, etc.) | 2.9167 |
| 4) Use of special effects or animation | 2.9167 |
| 5) Camera elements (angle of shot, etc.) | 2.5385 |

Note. Items were rank ordered from 1 = least influential to 5 = most influential. Fourteen respondents who stated they did not seek any video for classroom use were asked not to complete these survey items. Therefore, the number of cases (n) equals the number of actual versus expected responses to these items.

Table 9: Ability to find acceptable videos for the classroom.

| Response (value) | Frequency | Percent |
|---|---|---|
| Do not seek video | 15 | 15.5 |
| Never found | 1 | 1.0 |
| Seldom found | 16 | 16.5 |
| Sometimes found | 35 | 36.1 |
| Usually found | 26 | 26.8 |
| Always found | 4 | 4.1 |
| TOTAL | 97 | 100.0 |

Table 9a: Means for ability to find video by sample and subject.

| Subject | Mean | Standard Deviation | Cases |
|---|---|---|---|
| sample | 3.7010 | 1.4006 | 97 |
| social science | 4.4167 | 0.6686 | 12 |
| math | 2.0667 | 1.2228 | 15 |
| science | 3.8667 | 1.3020 | 15 |
| language | 3.9412 | 1.0290 | 17 |
| physical education | 4.2857 | 1.7995 | 7 |
| vocational studies | 3.6250 | 1.6279 | 16 |
| electives | 4.1333 | 0.8338 | 15 |

Note. 1 = do not seek video, 2 = never found, 3 = seldom found, 4 = sometimes found, 5 = usually found, 6 = always found.

Table 10: Factors affecting the selection of video by ability to find video

| Factor | Infrequent finders mean | cases | % | Frequent Finders mean | cases | % | Difference (n = 93) |
|---|---|---|---|---|---|---|---|
| 1) Length of video | 3.26 | 58 | 66.7 | 3.17 | 29 | 33.3 | -0.09 |
| ***2) Quality of materials available** | **3.64** | **59** | **67.8** | **3.79** | **28** | **32.2** | **0.14** |
| ***3) Appropriateness of information** | **4.02** | **59** | **66.7** | **4.21** | **29** | **33.0** | **0.19** |
| 4) Lesson design in the video | 3.40 | 58 | 66.7 | 3.65 | 29 | 33.3 | 0.25 |
| ***5) Suitability of curriculum to video** | **3.67** | **57** | **66.3** | **3.93** | **29** | **33.7** | **0.26** |
| ***6) Video's usefulness as a medium** | **3.65** | **60** | **67.4** | **3.97** | **29** | **32.6** | **0.31** |
| ***7) Selection of materials available** | **3.50** | **58** | **66.7** | **3.86** | **29** | **33.3** | **0.36** |
| 8) Satisfaction with video as a method | 3.28 | 60 | 67.4 | 3.72 | 29 | 32.6 | 0.44 |
| 9) Design of video | 3.47 | 58 | 66.7 | 3.97 | 29 | 33.3 | 0.50 |
| ***10) Suitability of subject to video** | **3.69** | **59** | **67.0** | **4.21** | **29** | **33.0** | **0.51** |
| 11) Organization of content information | 3.49 | 58 | 66.7 | 4.10 | 29 | 33.3 | 0.62 |

Note. 1 = never important, 2 = seldom important, 3 = sometimes important, 4 = usually important, 5 = always important. *denotes items rated 3.5 or higher (frequently or always important) are noted in boldface. Those with a small difference (indicating similar importance to both groups) are shown in boldface.

Table 11: Satisfaction with organizational, lesson, and production design elements by population and subject area.

Organizational Features

| | Use of scenes to illustrate concepts | Clarity of organization |
|---|---|---|
| Sample | 3.5882 | 3.5735 |
| Social science | 3.8182 | 3.9091 |
| **Physical education** | **3.0000** | 3.3333 |
| **Mathematics** | **3.0000** | **3.0000** |
| Science | 3.7273 | 3.4545 |
| Language | 3.8462 | 3.7692 |
| Vocational Studies | 3.1111 | 3.4444 |
| Electives | 3.8462 | 3.6154 |

| | Ability to show video in one session | Achievement of theme |
|---|---|---|
| Sample | 3.4348 | 3.5000 |
| Social science | 3.6364 | 3.7000 |
| Physical education | 3.5000 | 3.6000 |
| Mathematics | 3.6000 | **2.8000** |
| Science | 3.5455 | 3.1818 |
| Language | 3.3077 | 3.9231 |
| **Vocational Studies** | **4.0000** | 3.4444 |
| **Electives** | **2.7692** | 3.4615 |

| | Use of previews and summaries | Use of experts to illustrate concepts |
|---|---|---|
| Sample | 3.4143 | 3.1765 |
| Social science | 3.6667 | 3.5455 |
| Physical education | 3.6667 | **2.1667** |
| **Mathematics** | **2.8000** | 2.8000 |
| Science | 3.4545 | 3.2727 |
| Language | 3.6923 | 3.2308 |
| Vocational Studies | 3.0000 | 3.2222 |
| Electives | 3.3077 | 3.3077 |

Note. Cases: Sample=70/83, Social Science=12/12, Physical Education=6/7, Mathematics=5/7, Science=11/13, Language=13/16, Vocational Studies=10/13, Electives=13/15. 1 = never, 2 = seldom, 3 = sometimes, 4 = usually, 5 = always. Fourteen respondents who stated they did not seek any video for classroom use were asked not to complete these survey items. Therefore, the number of cases (n) equals the number of actual versus expected responses to these items.

## Lesson Design Features

| Expansion of video beyond text/lecture | |
|---|---|
| Sample | 3.5075 |
| Social science | 3.6364 |
| **Physical education** | **3.0000** |
| Mathematics | 3.2000 |
| Science | 3.3636 |
| Language | 3.5833 |
| Vocational Studies | 3.5556 |
| Electives | 3.7692 |

| Objectivity of content treatment | |
|---|---|
| Sample | 3.4242 |
| Social science | 3.8182 |
| Physical education | 3.3333 |
| **Mathematics** | **2.6000** |
| Science | 3.2727 |
| Language | 3.3333 |
| Vocational Studies | 3.5556 |
| Electives | 3.5833 |

| Provision of supplementary materials | |
|---|---|
| Sample | 2.7463 |
| Social science | 3.0000 |
| **Physical education** | **2.1667** |
| Mathematics | 2.4000 |
| Science | 2.3636 |
| Language | 2.7500 |
| Vocational Studies | 3.1538 |
| Electives | 3.1538 |

| Use of questions and feedback | |
|---|---|
| Sample | 2.7463 |
| Social science | 3.0000 |
| Physical education | 2.5000 |
| Mathematics | 2.6000 |
| **Science** | **2.2727** |
| Language | 3.0000 |
| Vocational Studies | 2.8889 |
| Electives | 2.7692 |

| Provision of task directions | |
|---|---|
| Sample | 2.6462 |
| Social science | 2.6000 |
| Physical education | 2.5000 |
| Mathematics | 2.4000 |
| Science | 2.3636 |
| Language | 2.8333 |
| **Vocational Studies** | **3.1250** |
| Electives | 2.6154 |

| Teacher's control over video's pace | |
|---|---|
| Sample | 2.4839 |
| **Social science** | **3.2000** |
| Physical education | 2.3333 |
| Mathematics | 2.2000 |
| Science | 2.1111 |
| Language | 2.6250 |
| Vocational Studies | 2.6250 |
| Electives | 2.3333 |

Note. Cases: Sample=70/83, Social Science=12/12, Physical Education=6/7, Mathematics=5/7, Science=11/13, Language=13/16, Vocational Studies=10/13, Electives=13/15. 1 = never, 2 = seldom, 3 = sometimes, 4 = usually, 5 = always. Fourteen respondents who stated they did not seek any video for classroom use were asked not to complete these survey items. Therefore, the number of cases (n) equals the number of actual versus expected responses to these items.

## Production Elements

| | | | |
|---|---|---|---|
| **Presentation Elements** | | **Sound elements** | |
| Sample | 3.5797 | Sample | 3.3824 |
| Social science | 3.8182 | Social science | 3.3636 |
| Physical education | 3.6667 | Physical education | 3.0000 |
| Mathematics | 3.2000 | Mathematics | 3.4000 |
| Science | 3.1818 | Science | 3.0909 |
| Language | 3.7692 | Language | 3.7692 |
| Vocational Studies | 3.9000 | Vocational Studies | 3.5000 |
| Electives | 3.3846 | Electives | 3.3333 |
| **Graphics** | | **Camera elements** | |
| Sample | 3.0000 | Sample | 2.9275 |
| Social science | 3.1818 | Social science | 2.8182 |
| Physical education | 3.0000 | Physical education | 3.0000 |
| **Mathematics** | **3.6000** | Mathematics | 3.2000 |
| Science | 3.0909 | Science | 2.3636 |
| Language | 3.0000 | Language | 2.8333 |
| Vocational Studies | 2.6000 | Vocational Studies | 3.0000 |
| Electives | 2.8333 | Electives | 3.0000 |
| **Special Effects** | | | |
| Sample | 2.8824 | | |
| Social science | 3.2727 | | |
| Physical education | 2.8333 | | |
| Mathematics | 3.2000 | | |
| Science | 3.0909 | | |
| **Language** | **2.3846** | | |
| Vocational Studies | 2.8000 | | |
| Electives | 2.8333 | | |

Note. Cases: Sample=70/83, Social Science=12/12, Physical Education=6/7, Mathematics=5/7, Science=11/13, Language=13/16, Vocational Studies=10/13, Electives=13/15. 1 = never, 2 = seldom, 3 = sometimes, 4 = usually, 5 = always. Fourteen respondents who stated they did not seek any video for classroom use were asked not to complete these survey items. Therefore, the number of cases (n) equals the number of actual versus expected responses to these items.

Table 12: Preferences for production techniques by sample and subject.

| Black & white (1) vs. color (7) | |
|---|---|
| Sample | 6.0571* |
| **Social science** | **5.4167** |
| **Physical education** | **6.6667*** |
| Mathematics | 6.4000* |
| Science | 6.3636* |
| **Language** | **6.5385*** |
| Vocational Studies | 6.2000* |
| **Electives** | **5.3846** |

| Still pictures (1) vs. motion (7) | |
|---|---|
| Sample | 5.6571* |
| Social science | 5.7500* |
| **Physical education** | **4.8333** |
| **Mathematics** | **4.0000** |
| **Science** | **6.1818*** |
| Language | 5.7692* |
| Vocational Studies | 6.0000* |
| Electives | 5.7692* |

| Dialogue (1) vs. narration (7) | |
|---|---|
| Sample | 3.5857 |
| Social science | 3.5833 |
| Physical education | 3.8333 |
| **Mathematics** | **4.4000** |
| Science | 3.9091 |
| **Language** | **2.6154** |
| **Vocational Studies** | **4.2000** |
| **Electives** | **3.3846** |

| Observer's (1) vs. participant's view(7) | |
|---|---|
| Sample | 4.0580 |
| Social science | 4.3333 |
| **Physical education** | **4.8333** |
| Mathematics | 3.8000 |
| Science | 3.6364 |
| Language | 4.1667 |
| **Vocational Studies** | **1.2293*** |
| **Electives** | **2.1602*** |

| Cuts between shots (1) vs. fades (7) | |
|---|---|
| Sample | 3.6286 |
| Social science | 3.8333 |
| Physical education | 3.8333 |
| Mathematics | 3.8000 |
| Science | 3.3636 |
| Language | 3.8462 |
| **Vocational Studies** | **1.7127*** |
| **Electives** | **1.6132*** |

| Oral (1) vs. graphic cues (7) | |
|---|---|
| Sample | 3.7857 |
| Social science | 3.9167 |
| Physical education | 3.5000 |
| **Mathematics** | **4.8000** |
| Science | 3.3636 |
| Language | 3.6154 |
| Vocational Studies | 4.0000 |
| **Electives** | **1.2352*** |

| Music (1) vs. no music (7) | |
|---|---|
| Sample | 2.3857* |
| Social science | 2.0833* |
| Physical education | 2.1538* |
| **Mathematics** | **3.2000** |
| Science | 2.3636* |
| Language | 2.1538* |
| **Vocational Studies** | **1.4491*** |
| **Electives** | **1.4632*** |

| Documentary (1) vs. dramatic (7) | |
|---|---|
| Sample | 4.1429 |
| **Social science** | **3.4167** |
| **Physical education** | **3.6667** |
| **Mathematics** | **3.4000** |
| Science | 3.7273 |
| **Language** | **5.2308** |
| **Vocational Studies** | **1.4181*** |
| **Electives** | **1.9149*** |

| Realism (1) vs. line drawings (7) | | On- (1) vs. off-screen narration (7) | |
|---|---|---|---|
| Sample | 2.6571 | Sample | 3.8857 |
| Social science | 2.5833 | Social science | 4.0000 |
| Physical education | 2.5000* | Physical education | 3.5000 |
| Mathematics | 4.0000 | Mathematics | 4.6000 |
| Science | 2.9091 | Science | 3.5455 |
| Language | 2.3077* | Language | 4.0000 |
| Vocational Studies | 2.7000 | Vocational Studies | 3.7000 |
| Electives | 2.3846* | Electives | 4.0000 |

Note. Cases: Sample = 70, Social Science = 12, Physical Education = 6, Mathematics= 5, Science = 11, Language = 13, Vocational Studies = 10, Electives = 13. *denotes scores at least 1.5 more or less than the neutral point of 4. Subject area ratings in boldface denote rankings at least 0.5 more or less than the total sample's rating. Fourteen respondents who stated they did not seek any video for classroom use were asked not to complete these survey items. Therefore, the number of cases (n) equals the number of actual versus expected responses to these items.

Table 13: Satisfaction with video's organizational, lesson, and production design features by ability to find video.

| Factor | Infrequent finders mean | cases | % | Frequent Finders mean | cases | % | Difference (n = °?) |
|---|---|---|---|---|---|---|---|
| 1) effectiveness of sound work | 3.18 | 40 | 58.8 | 3.68 | 28 | 41.2 | (n=68) 0.53 |
| 2) Control over pace of the video | 2.35 | 37 | 59.7 | 2.68 | 25 | 40.3 | (n=62) 0.33 |
| 3) Provision of task directions | 2.54 | 39 | 60.0 | 2.81 | 26 | 40.0 | (n=65) 0.27 |
| 4) Objectivity in content treatment | 3.33 | 39 | 59.1 | 3.56 | 27 | 40.9 | (n=66) 0.23 |
| 5) Ability to show in one session | 3.35 | 40 | 58.0 | 3.55 | 29 | 42.0 | (n=69) 0.20 |

Note. 1 = never, 2 = seldom, 3 = sometimes, 4 = usually, 5 = always. Fourteen respondents who stated they did not seek any video for classroom use were asked not to complete these survey items. Therefore, the number of cases (n) equals the number of actual versus expected responses to these items.

# Appendix B:

# Questionnaire

This survey contains several questions exploring your needs regarding instructional video and the ability of current video productions to meet those needs. Please read each item carefully and answer them to the best of your knowledge and opinion. Numbers are for computer use only. When finished please return in the provided envelope or to the box located in your mailroom.

**(1) Please check your primary area of instruction <u>at the present time</u> (check only one).**

_____social sciences (history, government, sociology, etc.)

_____mathematics

_____sciences (biology, physics, chemistry)

_____English/literature/writing/speech

_____physical education/health

_____electives (please specify)_____ _____

**(2) How many years (total) have you been employed as a classroom instructor?**

_____ years

**(3) Check below the amount of training you have completed in instructional media.**

_____unit(s) within an education/methods class or inservice workshops

_____one course in instructional media

_____two or more courses

**(4) Check the statement below you most agree with for videos in your primary area:**

_____I can always find a video that meets my needs in the classroom

_____I can usually find a video that meets my needs in the classroom

_____I can sometimes find a video that meets my needs in the classroom

_____I can seldom find a video that meets my needs in the classroom

_____I can never find a video that meets my needs in the classroom

_____I do not seek out any video material for use in my classroom

| **(5) For each item below, use the scale to indicate the importance of each factor suggested in contributing to your answer to #4. (circle only one number for each item)** | never | seldom | sometimes | frequently | always |
|---|---|---|---|---|---|
| organization of information in the video | 1 | 2 | 3 | 4 | 5 |
| appropriateness of information for student grade level | 1 | 2 | 3 | 4 | 5 |
| design of the lesson in the video | 1 | 2 | 3 | 4 | 5 |
| quality of the video's production design | 1 | 2 | 3 | 4 | 5 |
| length of the video | 1 | 2 | 3 | 4 | 5 |
| suitability of subject area to the use of media materials | 1 | 2 | 3 | 4 | 5 |
| suitability of the curriculum to the use of media materials | 1 | 2 | 3 | 4 | 5 |
| the quality of media materials available in your area | 1 | 2 | 3 | 4 | 5 |
| the selection of media materials in your subject area | 1 | 2 | 3 | 4 | 5 |
| your satisfaction with media as an alternative teaching method | 1 | 2 | 3 | 4 | 5 |
| usefulness of video materials for classroom instruction | 1 | 2 | 3 | 4 | 5 |
| other (please specify)_____ | 1 | 2 | 3 | 4 | 5 |

**(6) Check the statement below that you most agree with.**

_____video is not effective in teaching any cognitive skill or ability

_____video works best with simple cognitive skills (to motivate and hold attention)

_____video can teach complex skills (analysis and creative thinking), but does not do a good job at teaching all of them

_____video does an effective job of teaching all levels of cognitive skills

**(7) High ability students most, but not all, of the time (check one):**

_____look to be "entertained" by a classroom video before learning from it.

_____look to learn from the classroom video rather than simply being "entertained."

_____don't fall into either of the above statements.

**(8) Average-ability students most, but not all, of the time (check one):**

_____look to be "entertained" by a classroom video before learning from it.

_____look to learn from the classroom video rather than simply being "entertained."

_____don't fall into either of the above statements.

**(9) Low-ability students most, but not all, of the time (check one):**

_____look to be "entertained" by a classroom video before learning from it.

_____look to learn from the classroom video rather than simply being "entertained."

_____don't fall into either of the above statements.

**(10) Indicate the areas for which you would like to use MORE video (check all that apply).**

_____introduction of a topic or area of study
_____summary/review/follow up
_____visually teach/reinforce abstract ideas
_____cover current issues in your subject area
_____simulate/demonstrate the subject area
_____to motivate students
_____teach learners not benefitting from other methods
_____other (please specify):

_____to teach/explain new content
_____as a stimulant for discussion
_____emphasis of themes or topics covered
_____show "real-life" applications of subject
_____ visually teach/reinforce abstract ideas
_____introduce variety in method of teaching
_____to compensate for areas with which you are unfamiliar

**(11) Indicate those skills for which you would like to use MORE video (check all that apply).**

_____physical/motor
_____questioning/analytical
_____affective/emotional/values
_____mathematic/numerical
_____tasks or procedures
_____other (please specify):

_____spatial (perspective taking, visualization of forms)
_____problem solving
_____verbal/linguistic/language
_____creative thinking/composition

**IF YOU DO NOT SEEK OUT VIDEO FOR YOUR CLASS (see item 4) STOP HERE. Please express any additional thoughts you have regarding instructional video or this survey below.**

| **(12) When considering videos in your primary subject, how satisfied are you that the productions reach each of the following goals?** | never | seldom | sometimes | frequently | always | don't use video for this |
|---|---|---|---|---|---|---|
| introduction of a topic or area of study | 1 | 2 | 3 | 4 | 5 | ☐ |
| to teach/explain new content | 1 | 2 | 3 | 4 | 5 | ☐ |
| summary/review/follow up | 1 | 2 | 3 | 4 | 5 | ☐ |
| as a stimulant for discussion | 1 | 2 | 3 | 4 | 5 | ☐ |
| to visually teach/reinforce abstract ideas | 1 | 2 | 3 | 4 | 5 | ☐ |
| for emphasis of themes or topics covered | 1 | 2 | 3 | 4 | 5 | ☐ |
| to cover current issues in your subject area | 1 | 2 | 3 | 4 | 5 | ☐ |
| to show the "real-life" applications of your subject | 1 | 2 | 3 | 4 | 5 | ☐ |
| to simulate/demonstrate phenomena in your subject | 1 | 2 | 3 | 4 | 5 | ☐ |
| to visually teach/reinforce abstract ideas | 1 | 2 | 3 | 4 | 5 | ☐ |
| to motivate students | 1 | 2 | 3 | 4 | 5 | ☐ |
| to introduce variety in method of teaching | 1 | 2 | 3 | 4 | 5 | ☐ |
| to teach learners not benefitting from other methods | 1 | 2 | 3 | 4 | 5 | ☐ |
| to compensate for areas with which you are unfamiliar | 1 | 2 | 3 | 4 | 5 | ☐ |
| other (please specify): | 1 | 2 | 3 | 4 | 5 | ☐ |

| **(13) When considering videos in your primary subject, how satisfied are you that the productions teach each of the following skills?** | never | seldom | sometimes | frequently | always | don't use video for this |
|---|---|---|---|---|---|---|
| physical/motor | 1 | 2 | 3 | 4 | 5 | ☐ |
| spatial (perspective taking, visualization of forms) | 1 | 2 | 3 | 4 | 5 | ☐ |
| questioning/analytical | 1 | 2 | 3 | 4 | 5 | ☐ |
| problem solving | 1 | 2 | 3 | 4 | 5 | ☐ |
| affective/emotional/values | 1 | 2 | 3 | 4 | 5 | ☐ |
| verbal | 1 | 2 | 3 | 4 | 5 | ☐ |
| mathematic/numerical | 1 | 2 | 3 | 4 | 5 | ☐ |
| creative thinking/composition | 1 | 2 | 3 | 4 | 5 | ☐ |
| tasks or procedures | 1 | 2 | 3 | 4 | 5 | ☐ |
| other (please specify):_____ | 1 | 2 | 3 | 4 | 5 | ☐ |

| **(14) Please rate each of the following items according to how important they are to a video production in your field.** | never | seldom | sometimes | frequently | always |
|---|---|---|---|---|---|
| previewing/summary of material | 1 | 2 | 3 | 4 | 5 |
| use of scenes to illustrate or exemplify a point | 1 | 2 | 3 | 4 | 5 |
| use of "content expert" interviews to explain material | 1 | 2 | 3 | 4 | 5 |
| achievement of a theme within the program itself | 1 | 2 | 3 | 4 | 5 |
| clear organization of ideas presented in the video | 1 | 2 | 3 | 4 | 5 |
| the ability to show the video in one class session | 1 | 2 | 3 | 4 | 5 |

| **(15) How often have you observed the following features in the content material of videos you have <u>considered using or used in class</u>?** | never | seldom | sometimes | frequently | always |
|---|---|---|---|---|---|
| previewing/summary of material | 1 | 2 | 3 | 4 | 5 |
| use of scenes to illustrate or exemplify a point | 1 | 2 | 3 | 4 | 5 |
| use of "content expert" interviews to explain material | 1 | 2 | 3 | 4 | 5 |
| achievement of a theme within the program itself | 1 | 2 | 3 | 4 | 5 |
| clear organization of ideas presented in the video | 1 | 2 | 3 | 4 | 5 |
| the ability to show the video in one class session | 1 | 2 | 3 | 4 | 5 |

| **(16) Please rate each of the following items according to how important they are to a video production in your area of instruction.** | never | seldom | sometimes | frequently | always |
|---|---|---|---|---|---|
| objectivity of content treatment within the video | 1 | 2 | 3 | 4 | 5 |
| the video's expansion beyond material covered in your text/lecture | 1 | 2 | 3 | 4 | 5 |
| cues for teacher control of presentation pace | 1 | 2 | 3 | 4 | 5 |
| provision of supplemental materials for instruction (assignment guides, discussion questions, etc.) | 1 | 2 | 3 | 4 | 5 |
| inclusion of questions, student practice, and feedback | 1 | 2 | 3 | 4 | 5 |
| provision of direction for completing tasks | 1 | 2 | 3 | 4 | 5 |

| **(17) How often have you observed the following features in the lesson design of videos you <u>have considered using or used in class</u>?** | never | seldom | sometimes | frequently | always |
|---|---|---|---|---|---|
| objectivity of content treatment within the video | 1 | 2 | 3 | 4 | 5 |
| the video's expansion beyond material covered in your text/lecture | 1 | 2 | 3 | 4 | 5 |
| cues for teacher control of presentation pace | 1 | 2 | 3 | 4 | 5 |
| provision of supplemental materials for instruction (assignment guides, discussion questions, etc.) | 1 | 2 | 3 | 4 | 5 |
| inclusion of questions, student practice, and feedback | 1 | 2 | 3 | 4 | 5 |
| provision of direction for completing tasks | 1 | 2 | 3 | 4 | 5 |

**(18) Please order the following groups of video production techniques from most to least influential upon learning?** (1=the least influential, 5=the most influential; DO NOT USE ANY NUMBER MORE THAN ONCE)

_____camera elements (angles, type of shot, etc.)
_____sound elements (music, narration, etc.)
_____presentation elements (dramatic impact, humor, etc.)
_____graphic elements (subtitles, arrows, etc.)
_____special effects or animation

| **(19) Use the scale to rate how effective the following production elements are in the videos you have considered using or used in class?** | never | seldom | sometimes | frequently | always |
|---|---|---|---|---|---|
| camera elements (angles, type of shot, etc.) | 1 | 2 | 3 | 4 | 5 |
| sound elements (music, narration, etc.) | 1 | 2 | 3 | 4 | 5 |
| presentation elements (dramatic impact, humor, etc.) | 1 | 2 | 3 | 4 | 5 |
| graphic elements (subtitles, arrows, etc.) | 1 | 2 | 3 | 4 | 5 |
| special effects or animation | 1 | 2 | 3 | 4 | 5 |

**Below are pairs of video production techniques. Use the scale to indicate the balance you prefer between the two in videos on your subject, or if the pair does not apply to your subject area. Check one box for each item.**

black & white — even mix — color — doesn't apply ____

still picture — even mix — motion/action — doesn't apply ____

dialogue (2 or more people) — even mix — narration (1 person) — doesn't apply ____

on-screen narration — even mix — off-screen narration — doesn't apply ____

full realism pictures — even mix — simplified pictures/ line drawings — doesn't apply ____

an "observer's view of the scene — even mix — a "participant's" view of the scene — doesn't apply ____

"cuts" or "jumps" to the next shot — even mix — "fades" or "wiping" the screen to a shot — doesn't apply ____

oral signals to point out cues — even mix — graphics (arrows, print, etc.) to point out cues — doesn't apply ____

background music to link similar scenes — even mix — no music at all — doesn't apply ____

"documentary style" — even mix — "dramatic style" — doesn't apply ____

**(27) Do you use instructional video tapes in your primary area of instruction during the academic year?**

____no

____yes

**IF NO, STOP HERE.**

**(28) In this subject area, about how many videotapes (or series of tapes) do you use in your classes per semester?**

**29) Check below the source from which you acquire the most tapes in your subject area?**

_____video company catalogues, pamphlets, etc.

_____regional libraries or other resources within your school system

_____public or commercial television

_____in-school productions or self-made videos

other (please specify):

**(30) In which of the following types of classes do you currently use video? (check all that apply)**

_____high ability students

_____average ability students

_____low ability students

**Below please feel free to express any additional thoughts you have on instructional video or this survey (use additional sheets if needed).**