Learner Interests, Achievement, and Continuing Motivation in Instruction

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Abstract. Learners often feel that instruction lacks personal relevance. Designing instructional materials that account for learners' interests may be one means of improving motivation in instruction. High school seniors (N=72) participated in an experimental study that investigated the motivational effects of incorporating their reported interests into instruction. Results showed that significantly more learners were willing to return to a task that used their interests ($F=5.76$, $p<.02$). Using interests was valuable for both high and low achievers. Interests are discussed.

Achieving optimum motivation of learners is a central, if largely unfulfilled, goal of the instructional development process. Since learners often find instruction lacking in personal relevance, the issue of how best to achieve learner motivation is a pressing one. Significant theoretical inquiries have explored motivational factors as they relate to instruction (e.g., Keller, 1983). However, prescriptions for motivating learners remain rare, and these prescriptions are seldom generally or routinely applicable.

The use of learner characteristics is a feature of the majority of models of instructional design (see Andrews & Goodson, 1980). Instruction that can meaningfully account for these characteristics is found to be more motivational. Yet of those learner characteristics actually used in instruction (e.g., age, achievement level, self-pacing), few have inherent, demonstrated value as motivators. The present study explores the possibility that a seldom-studied learner characteristic may be useful in addressing these motivational needs: learner interests.

Learner interests are often described as valuable tools for motivation in instruction (e.g., Briggs, 1977; McNeil, 1976; Powell, 1971). To date, though, interest use has been more passive than active; in other words, learners' interests are more often associated with, rather than actually incorporated into, instruction. Reading is perhaps the prime example of passive interest use.

Providing poor readers with high interest, low vocabulary material is often encouraged (e.g., James & Chang, 1983). Such efforts function largely as a matter of learner choice; that is, learners select reading materials that match their interests. Learners' improved desire to read has established the value of this technique as a motivator. Its procedural ease and clarity have also allowed it to become a matter of routine. Yet active interest use remains rare.

The active use of interests has been explored in a number of experiments (Anand & Ross, 1987; Ross, 1983; Ross, McCormick, & Krisak, 1986; Ross, McCormick, Krisak, & Anand, 1985). These studies showed some evidence of improved performance when interests were used in the example-base of instructional text. However, no systematic approach to the assessment of interests was undertaken. In some cases, interests were merely inferred. Perhaps most importantly, there was no measure of learner motivation. The present study was conducted to explore the possibility that an active use of systematically assessed interests may produce measurable motivational improvements.

Continuing motivation is a frequently used measure of learner motivation (e.g., Hughes, Sullivan, & Mosley, 1985; Story & Sullivan, 1986). The most common measure of continuing motivation involves learners' free choice of whether to return to a previous task. The "Zeigarnik effect" is a special type of continuing motivation. It is defined as a willingness to reengage an uncompleted, intrinsically motivating task (Green, 1963; Kruglanski, Friedman, & Zeevi, 1971).

Intrinsic motivation has been described as attributing one's own behavior to one's own interests rather than to externally controlling circumstances (Luyten & Lens, 1981). Willingness to reengage an uncompleted task has been shown to be directly related to levels of intrinsic motivation (e.g., McGraw & Fiala, 1982). If use of learners' interests in instruction has value as a motivator, it is hypothesized that learners will choose to reengage an uncompleted, intrinsically motivating task that uses such interests more frequently than one that does not.

Interest use is primarily associated with low achievement (e.g., in reading). Yet similar age groups at both high and low achievement levels express similar interests (e.g., Zbaracki, Clark, & Wolins, 1985). There is little evidence that actively using learners' interests in an instructional task would have differential effects for high and low achievers. Since grouping in instruction occurs most often on the basis of achievement, this study tests the hypothesis that interest use is valuable for both high and low achieving groups.

The purpose of the present study was to investigate the effect on motivation of incorporating learners' interests into an instructional task. Effects were studied across high achieving and low achieving learners.

Method

Subjects

Three classes of high school seniors from a middle class suburban high

school were chosen as subjects. This sample was divided into high and low achievers. Seventy-two (72) subjects participated in the final experiment, 36 high and 36 low achievers (8 low achievers were dropped at random from the sample to achieve equal numbers in each treatment group). None of the subjects had been exposed to instruction on syllogisms, the subject area of the experimental materials.

Materials

A short self-instructional unit on how to solve conditional syllogisms was designed for use as the instructional task. The objective of the unit was for the learner to identify the correct conclusion for a given major and minor premise for the four types of conditional syllogisms. There were two versions of this unit: an "interests" version and a "no interests" version. These versions differed only in the premise examples used. In the interests version, interest examples were embedded in each syllogistic premise. The no interests version was interest-free; that is, no expressed learner interests appeared in the syllogistic premises.

Data from an interest inventory given to all subjects provided the examples for the interests version. Interest examples were chosen based on the most frequently reported learner interests. The following is an example of an interests version syllogism:

MAJOR PREMISE: If he fixes his Firebird, then he will drive to San Diego.
MINOR PREMISE: He did not drive to San Diego.
CONCLUSION: A. He did not fix his Firebird. B. There may be more than one possible conclusion. C. He fixed his Firebird.

A syllogism in the no interests version read:

MAJOR PREMISE: If he fixes it, then he will go.
MINOR PREMISE: He did not go.
CONCLUSION: A. He did not fix it. B. There may be more than one possible conclusion. C. He fixed it.

Both the interests and no interests units were labelled as "Part I" to establish them as incomplete. A 12-question self-correcting multiple-choice quiz concluded each version of the unit.

Procedures

High achievers (n=36) and low achievers (n=36) were identified by their classroom teachers. High achievers were defined as those currently having overall gradepoint averages of A or B. Low achievers were those having averages of C, D, or E. An interest inventory was given to all 72 subjects. No trends emerged for gender or achievement. Interest examples were incorporated into the interests version syllogism unit.

To establish the two syllogism units as equal in difficulty for high and low achievers, an additional 20 subjects (10 high and 10 low achievers) were chosen for a small-group preliminary tryout. Four groups were randomly formed. Five high and five low achievers were given the interests version of the syllogism unit. Five high and five low achievers were given the no interests unit. Average percent correct for the 12 question final quiz (no answers were provided) was approximately 90% for both versions of the unit and for both high and low achievers.

To ensure that the overall syllogism task was intrinsically motivating at a baseline level, subjects were offered the option of either "trying out a unit that teaches you how to solve special kinds of problems in logic" or individually pursuing their own work. All subjects chose the syllogism task. Subjects were blocked on the basis of achievement. Each block was then randomly assigned either the interests or no interests syllogism unit and asked to complete it.

Interest and Criterion Measures

Interest Inventory. An interest inventory based on the work of Sarbin (1964) was designed for this experiment. Sarbin described the human experience as an interaction of five "ecologies." These ecologies are critical facets of the environment within which the individual forms collections of highly valued interests. The ecologies are (a) Self-Maintenance (objects and activities), (b) Spatial (places), (c) Social (persons), (d) Normative (knowledge and skills), and (e) Transcendental (ideas and beliefs).

Five inventory questions were derived from four of the ecologies. Respondents were asked to list three items for each question and to make answers as specific as possible. No order of ranking was required. The five questions asked for lists of (a) three favorite possessions, (b) three things one likes to do best, (c) three places that one likes best, (d) three highly valued persons (not friends, family members or relatives), and (e) three things in which one has a valued knowledge or skill. To avoid controversy with high school subjects, a question concerning valued ideas and beliefs was not included.

Criterion Measure. The following question, which appeared at the end of each version of the syllogism unit, was used as the measure of continuing motivation: "You have just finished Part 1 of a unit on solving syllogisms. Would you be willing to do Part 11 sometime in the future? (Yes or No)."

Design and Data Analysis

The experiment used a 2 (interests, no interests) X 2 (high achievement, low achievement) factorial design. There was one dependent variable: willingness to return to task (Yes or No). Analysis of variance (ANOVA) was used for analysis of the dichotomous data. Analysis of variance has been shown to be robust for dichotomous data (Glass, Peckham, & Sanders, 1972).

Results

Table 1 shows the frequency of willingness to reengage the task by interests and achievement.

Table 1 shows that 24 of 36 subjects (67 percent) in the interests treatment and 15 of 36 (42 percent) in the no interests treatment reported a willingness to return to task. The analysis of variance revealed a significant difference favoring the interests over no interests approach, $F(1.68)=5.76$, $p<.02$.

Twenty-seven of the thirty-six (27 of 36) high achievers (75 percent) and 12 of the 36 low achievers (33 percent) chose to return to task. This difference was also significant, $F(1,68)=16.00$, $p<.001$.

The interaction of interests and achievement was not statistically significant.

Variance Accounted For

The interest factor accounted for 8 percent of the variance in the results, the achievement factor for 19 percent, and achievement by interest for 3 percent.

Reported Interests

The most frequently reported interests of the 72 subjects, as indicated on the interest inventory, are summarized in Table 2. Also shown is the percentage of students reporting each item.

It can be seen that, across the 5 categories, sports-related and music-related topics were mentioned most frequently.

Discussion

This study investigated the use of learners' interests in instruction. Significantly more subjects in the interests than in the no interests groups were willing to return to task. Both high and low achievers chose to return more frequently to the interests than the no interests unit of instruction.

Results suggest that interests can be used to improve motivation in instruction. Learners displayed significant gains in continuing motivation when a representative selection of their interests was used in the example-base of an instructional task. This task was not only unfamiliar, but considered difficult (e.g., Taplin, 1971; Evans, 1972). Although the present study represents only one approach to the use of interests, findings indicate that interests can play an important role in helping instructional developers to motivate learners.

Significantly more high than low achievers were willing to return to task. Such return rates are characteristic of high and low achievers (e.g., Atkinson, 1964). Improving low achievers' desire to return to task remains an important objective. For example, given low achievers' need for high task structure (Cronbach & Snow, 1977), a more focused use of interests examples may prove beneficial. This could perhaps involve use of interests from a single subject area (e.g., cars). Further study of such techniques is needed.

A number of patterns emerged from interest inventory data. For example, music-related objects were the most prized possessions of study participants (60%). This remains a common finding (e.g., Rochberg-Halton, 1984). The vast majority of these music-related items were stereos, records, and tapes. Interestingly, stereos were more valued than the music played on them (47% to 21%).

Sports were major factors in the lifestyles and perceived personal qualities of subjects. Approximately 70% listed sports as not only an important activity, but as a valued area of personal ability. This reflects the extent to which sports retain preeminence in the daily activities and aspirations of this age group.

Over half the subjects (54%) listed a car as a favorite possession, a high incidence of car ownership among high school seniors. Surprisingly, places in California were preferred over the home (43% to 33%).

Results concerning valued persons (no friends or relatives could be listed) were unexpected. Ronald Reagan was the single person to emerge with even a modest concensus (17%). Among other current figures, only Tom Cruise found a significant number of adherents (7%).

Inventory results replicated a unique psychological phenomenon. More value is placed on physical objects than the uses for which they are intended (see Harrison & Sarre, 1971). For example, musical objects (stereos, records, etc.) were more valued than listening to music (60% to 34%). Owning a car was more valued than driving a car (54% to less than three percent). This may have implications for interest use. Learners may be more responsive to object-based than activity-based interests. This could be a useful basis for future research.

Collective rather than individual interests were used in this study. Results suggest that individual learners can be motivated by interests that are representative of groups of learners. This approach is a decided advantage for the instructional developer. The interest inventory used in this study appears a useful, systematic means of collating data on collective interests. The specific interests listed in inventory responses also allow variety in the use of interest examples. For instance, specific cars reported by learners (e.g., TransAm, Corvette, etc.) can be brought into the instructional text without undue concern that they will lack general appeal.

The present data suggest potential benefits from additional research on interests. For example, exploring interests under a variety of ages, subject areas, and instructional media may be of value. Computers, in particular, appear promising. They offer the means to inventory interests and immediately incorporate the findings into instruction. Such a procedure may provide a useful means of individualizing instruction.

This study indicates that actively incorporating learners' interests into an instructional task can help motivate learners to continue with that task. The increased desire to persist in a task has long-range implications for improvements in learning and performance. Present findings suggest that systemati-

Table 1
Frequency of Willingness to Reengage Task by Program Version and Achievement

	Interests	No Interests	Total
HI ACH (n=36)	17/18 (94%)	10/18 (56%)	27/36 (75%)
LO ACH (n=36)	7/18 (39%)	5/18 (28%)	12/36 (33%)
Total	24/36 (67%) (67%)	15/36 (42%) (42%)	39/72 (54%) (54%)

Table 2
Summary of Results on Interest Inventory

1. Favorite Possessions:	
Music-Related	60%
Cars	54%
Clothes	33%
Pets	33%
2. Favorite Activities:	
Sports	67%
Music-Related	34%
Being with People	33%
The Outdoors	26%
3. Favorite Places:	
Places in California	43%
Places in the Home	33%
Friend's Home	11%
4. Favorite People:	
Ronald Reagan	17%
John Wayne	7%
Tom Cruise	7%
Abraham Lincoln	7%
5. Valued Knowledge and/or Skills:	
Sports-Related	70%
Music-Related	33%
Cars	13%
Outdoors-Related	11%

cally identifying learner interests, and actively using them in instruction, may provide learners an added perception of relevance. Interests may have the potential to become increasingly useful tools in efforts to motivate learners.

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