

Applying Learning Theory In A Retailing Environment

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Abstract

This paper reports on an experiment, conducted in a retail computer store, that assesses one aspect of the success of point-of-purchase activities developed from the perspective of learning theory. Department store shoppers were recruited to participate in a study disguised as an adult computer learning application and asked to take part in one of three point-of-purchase applications or a control group. The purpose of the study was to see if learning theory, often tested in a laboratory experimental context, could be used to develop meaningful point-of-purchase activities for retail selling of computers. The results of the study indicated that some type of point-of-purchase activity may be preferable to no activity, but that the types of point-of-purchase used in this study make no difference on the dependent measures, perceptions of computer attributes and intention to buy. The study is one more indication of the difficulty of using laboratory findings and extending them to an applied field setting.

Introduction

Learning theory typically plays an important part in most discussions of how consumers behave. Applications of learning theory to marketing activity have also been the focus of some empirical testing, usually in laboratory settings, with applications being the focal point of these activities.

Two trends are rather apparent in examining theory development and application in learning theory. The first is that cognitive learning theories are the most prevalent. The early global theories of buyer behavior such as Howard and Sheth (1967) and Engle Kollat and Blackwell (1968) were cognitive in approach. Other learning theory approaches, notably behavioral approaches, have been much slower in penetrating mainstream consumer behavior theory development and application. As Peter and Olsen (1987) note, the two perspectives are very much at odds in terms of their assumptions and philosophical positions. Given the bias in the discipline, classical conditioning, operant conditioning, and vicarious learning approaches to understanding consumer behavior are much less prevalent.

The second trend is that most tests of learning theory are conducted in a laboratory setting, for obvious reasons. A laboratory setting allows for more control and is generally easier to plan and execute than the field experiment. The advantage of a field experiment is the

ability to use a more realistic population and setting, thus contributing to what some authors consider stronger external validity.

The purpose of this paper is to report on a study developed from a very pragmatic perspective. Computer retailing, that is, the retail selling of computers to households, is a relatively new activity. A typical problem facing a retailer is that his staff will often be either standing around doing nothing for lack of customers or be working with one or more customers while several others wait to be served. While this could be correctly viewed as a problem of scheduling of sales personnel, the practicing computer retailer is well aware that there are limits to scheduling effectiveness. Consumer queues are bound to occur, even in the retail stores with superior scheduling. The concern then becomes what other types of measures could be taken to help alleviate this problem, given the financial limits to hiring more salespeople. One possibility is to give customers something to do while they are waiting. This would at least occupy their time while they are waiting, a task most consumers do not enjoy. They might even learn something about computers or software while they are waiting. Pragmatically the approach is turning what is a negative situation into a positive one. Few retailers would be adverse to that, especially if it does not cost too much.

Point-of-purchase activity is the area of study within retailing that applies to the problem at hand. Most research studies in point-of-purchase, e.g., Curhan (1974), Dickson (1974), Woodside and Waddle (1975), Chevalier (1975), and McKinnon, Kelly, and Robison (1981) has looked at the effectiveness of signs in generating consumer purchases of grocery products and other consumer nondurables. As Bolen (1984) notes, point-of-purchase can also use the product itself as the vehicle to increase sales.

A field experiment in a computer retail establishment was planned and executed in an attempt to apply learning theory to a point-of-purchase activity in an attempt to deal, at least partially, with the problem noted above.

Learning Theory and its Application

To date, there are no reported academic studies of point-of-purchase within the computer retailing context. A visit to any computer store, however, indicates that they have the usual signs as indicated in the Bolen (1984) typology and hence make a practicable research environment. Computers and other similar equipment has, however, a unique advantage from a point-of-purchase perspective. The product itself can be used and the customer can interact with it. In fact, there is a lot of activity by practitioners who are attempting to use the product in a point-of-purchase context. (Lerner 1984).

Learning has been defined within the context of consumer behavior by Schiffman and Kanuk (1983) as follows;

"the process by which individuals acquire the purchase and consumption knowledge and experience they apply to future related behavior."

Learning theory can be one theoretical avenue to help us understand how point-of-purchase works. Since the terms "inform" and "persuade" are commonly used to define advertising, and point-of-purchase activities can be defined in some sense as advertising, learning theory should provide some understanding of the potential effectiveness of these activities.

There are many theories of learning, but the most prominent are classical conditioning, operant conditioning, vicarious learning or modeling, and cognitive learning theory. The last can be considered the mainstream learning theory in marketing.

Classical or respondent conditioning suggests that

learning can be brought about by repeating a stimulus which is associated with some outcome over time. An important assumption of the process is that it is thought to be involuntary or not consciously controlled. Until very recently, research in consumer behavior has not used this learning paradigm, but there are suggestions of its importance in advertising (Preston 1982). Researchers such as Gorn (1982), Feinberg (1982), Krober-Riel (1984), McSweeney and Bierley (1984), Allen and Madden (1985), Bierley, McSweeney and Vanieuwkerk (1985), and Gresham and Shimp (1985) have expanded our knowledge of the usefulness of this theory in marketing. Numbers of these articles have also examined the major assumptions of the conditioning perspective and discussed the problematic findings on attempts to test the issue of conscious versus non-conscious control.

Operant conditioning was developed by Skinner (1953) and has been discussed by Nord and Peter (1980) and Peter and Nord (1982). This theory is dominated by the response-reinforcement concept where learning occurs by encouraging behavior with a positive or negative reward. It differs from respondent conditioning in the assumption that the learner has conscious but not cognitive control, and that the behaviors are undertaken in response to the consequences of those behaviors. Surprisingly, only the studies of Deslauriers and Everett (1977) and Carey et al. (1976) have used this paradigm in a marketing setting, using field experimentation in both studies.

Vicarious learning was developed by Bandura (1969, 1977), and is based on the notion that we can change peoples' behavior by having them observe the actions of others. Almost all the research in this area is in the discipline of psychology. Examples of marketing activity include the work on the physical attractiveness of models in advertising by Baker and Churchill (1977) and Kahle and Homer (1985). Much of advertising and in-store promotion, however, appears to be based on the notion of vicarious learning.

Cognitive learning theory is dominated by the Atkinson and Shrifin (1968) theory which posits different types of memory storage systems. Craik and Lockhart (1972) and Craik and Tulving (1975) have discussed levels of processing and elaboration of coding as important to memory processes and, therefore, learning. Further, Collins and Loftus (1975) suggest that activation is the key and unless stimulation occurs, learning cannot. There are perhaps thousands of applications of this perspective of learning, either explicit or implicit, in the marketing literature. The major global models of

consumer behavior such as Howard and Sheth (1967) and Engel, Kollat, and Blackwell (1968) are based on this paradigm. Bettman (1979) is the author of the most comprehensive theory of consumer choice based on a cognitive learning perspective.

Most empirical tests of learning theory have taken place in the laboratory. There are actually thousands of studies demonstrating the value of these theories in a laboratory context, but very few in a field study marketing context. As noted above, instrumental conditioning has been tested in the field in a marketing context only twice, (Carey et al. 1976; Deslauries and Everett 1977) and there are no studies within the context of point-of-purchase or other retail contexts. Virtually all the work in classical conditioning has also been laboratory experiments. Some studies in vicarious learning, notably Catt and Benson (1977) have been field studies, but Baker and Churchill (1977) is more typical using student subjects and a laboratory setting.

As the dominant learning paradigm used in marketing, cognitive learning theory has been utilized in many field and laboratory studies within a marketing or consumer behavior context.

An interesting applied question and the subject of this research concerns whether learning theory can provide a basis for the computer retailing practitioner in developing point-of-purchase activities. The brief literature review has presented several competing paradigms which contrast primarily on the assumptions they make regarding how the learning process actually works.

Several approaches can be taken. A simple approach is to adopt a single perspective, develop a research design to test some aspect of that perspective and go on from there. The approach that is taken here is a little more ambitious. While this work should not be construed as a critical test of theory, nor the assumptions underlying that theory, the assumptions underlying the various theories were examined and several perspectives are utilized here.

The primary assumption differentiating the conditioning paradigms and the cognitive paradigm is that of the assumption of a lack of cognition in conditioned learning. Recent analyses by both McSweeney and Bierley (1984) and Allen and Madden (1985), within the context of classical conditioning, have noted that several studies in the psychology literature have attempted to test that assumption. Support for conditioned learning with and without cognition has been reported. An examination of that research suggests the problematical nature of those

findings - McSweeney and Bierley (1984) go so far as to suggest that this particular assumption may not even be testable with the current methodology. The assumption used in this study is that the cognitive/non-cognitive differentiation is artificial and, if it does exist, is rare. Virtually all learning is cognitive and the concepts of operant conditioning, response condition, vicarious learning and even expectancy theories of motivation (Manz and Sims 1981) can be integrated to provide a comprehensive explanation of why one point-of-purchase technique used here will perform better than another. This integration will be explained more fully in the hypotheses section.

The Study

A field experiment was designed in order to develop and test the above notions. The choice of a field rather than laboratory experiment was a conscious effort to test particular theoretical notions in an applied setting. Since the trade-offs between laboratory and field research are well known they will not be belabored here. The specific goal of this research was to test a set of hypotheses relating to point-of-purchase activities within a framework as close to the actual conditions faced by practitioners.

The product class chosen was personal computers. Lener (1984) has discussed the use of sophisticated point-of-purchase techniques such as CAST which is used to demonstrate software applications on Epsom computers. Quelch and Cannon-Bonventre (1983) report on the Atari ERIC system which uses questions asked by the retailer of the customer to select a video for viewing. Several other examples with passive or involved consumers are documented in the practitioner literature.

There are many reasons a computer retailer might want to use the computer to entertain or otherwise occupy the customer while in the store. Typically, a computer sale is time consuming. By having the customer occupied in this manner while waiting for the salesperson to finish another presentation, the potential customer may be less likely to resent the wait. It is also possible that while the customer is occupied he or she may learn about some of the features of the product and thus not take up as much of the salesperson's time. It may also be possible to modify customer attitudes toward the product using these techniques, and thus make the job of the salesperson that much easier.

The setting for the study was in a leased computer department of a major department store in regional

shopping mall in Monmouth County, New Jersey. Shoppers within the store were asked to participate in a university-sponsored study to understand how to make adults more computer literate. The study was sponsored by a major university. Thus the research was disguised as a university learning project, and not as a test of point-of-purchase activity. It was conducted over a 10 week period from February through April of 1986. Data was collected starting Friday at 4:00 PM and continued until Sunday at 5:00 PM during the open hours of the store. No data was collected at any other time.

The study was an after-only with control group field experiment with a total of three manipulations plus control group. The manipulations were a series of computer disks that were inserted in an Apple Computer and then run by the respondent. Each manipulation consisted of three tasks; an address book activity, correcting a letter with typographical errors, and balancing a check book. All three tasks are common activities for many people. The first cell of the experiment was the control group (CON). This group completed the preliminary questionnaire and then proceeded to fill out the second set of questionnaires which comprise the dependent variables of this study. The second cell was interactive with an overt reinforcement of the "you did a great job" type after each screen. It is referred to as the fully reinforced interactive manipulation (FRIM). The third cell, referred to as the non-reinforced interactive manipulation (NRIM), was the same as the second, except there was no overt reinforcement. The fourth cell was noninteractive in that the respondent just observed an approximately six minute presentation (NIM). All three manipulations were identical in content with the stated exceptions. The entire exercise comprised 45 screens and the range of time to complete the exercise was 6 to 14 and 1/2 minutes.

It should be noted that while the overt manipulations were positive reinforcement, negative reinforcement was also used. Extreme care was made to make the programs used by the respondent as foolproof as possible. Significant testing was done on prototype computer disks in an attempt to make it all but impossible for a respondent to create a problem when using the disks. Thus the removal of the opportunity of having a major failure could be construed as a negative reinforcement. Respondents could and did occasionally make a mistake, but the program recognized that and gave them a gentle reminder and got them back on track.

Respondents were chosen at random, alternating males and females, from shoppers passing a series of predetermined points in the store. In order to induce

people to participate in what was described as a half hour exercise, eight \$50 gift certificates were raffled to the people who participated. Participants were also screened for computer knowledge. Only those potential respondents who stated they had little or no computer knowledge were included. The rationale for this will be made obvious later in this presentation. The pre-screened respondents filled out a preliminary questionnaire which collected demographic data and three additional checks of computer knowledge. Respondents were then assigned at random to either one of the three treatment groups or to the control group, with consideration paid to sex makeup and size of the groups. A total of 229 subjects participated. Only 148 respondents (37 per cell) are included in the analysis. A total of 25 respondents did not complete the exercise. Twenty-one respondents passed the preliminary screening for computer knowledge, but failed one or more of the three secondary checks and were deleted from the study. The field pretest was conducted on the first 35 respondents and hence these were not included in the findings. Prior to the field pretest, 26 students participated in the study within a laboratory environment which provided for a preliminary test of the measures, especially the manipulation checks. Only Cell 2 (FRIM) and Cell 4 (NIM) were tested in the student pretest. Results of the laboratory pretest indicated the manipulation was working and that there were main effects on the dependent variables.

Hypotheses

The following hypotheses were tested in the study:

- 1 Fully reinforced interactive point-of-purchase will more positively change the consumer's cognitive responses to personal computers than will noninteractive point-of-purchase.
- 2 Overtly reinforced point-of-purchase will more positively change the consumer's cognitive responses to personal computers than will non overt reinforced interactive point-of-purchase.
- 3 All types of point-of-purchase activity will outperform the control group.

The study looks strictly at the learning aspects of this type of exercise and makes no effort to assess any other benefits the use of this activity might bring to the retailer. The first hypothesis compares Cell 2, fully overt reinforced interactive activity (FRIM), to Cell 4, the noninteractive activity (NIM). The second hypothesis compares Cell 2, fully overt reinforced interactive

activity (FRIM), to the non-overt interactive activity of Cell 3 (NRIM). The last hypothesis suggests that Cells 2, 3, and 4 will all be preferable to the control group of Cell 1 (CON).

The rationale for these findings follow from the literature review and the assumptions about the presence or absence of cognition. The argument for the first hypothesis has two parts. The interactive nature of FRIM (cell 2) would engender the kinds of responses following Craik and Lockhart (1972) and Craik and Tulving (1975). We would expect more elaborate coding and deeper and broader thinking patterns leading to more learning. The use of positive reinforcement would also create more positive cognitive patterns, and, since it was very difficult to make an error, would provide additional negative reinforcement. Since the respondents were computer illiterates, and the actual program took them through 43 screens and thus 43 positive reinforcements, this, coupled with the fact it was difficult not to have a positive reinforcement, would engender an expectancy as they went along and contribute to greater learning. The noninteractive or passive mode (NIM) (cell 4) is much less involving, does not have the overt positive reinforcement and is much less apt to engender more elaborate coding and processing patterns. That there is nonovert reinforcement, however, by the advancement of the screen, would also be likely to engender an expectancy type reaction. Obviously, that the screen moves automatically also provides a large degree of negative reinforcement, but since they are not doing it, this will have little impact.

The second hypothesis specifically addresses the issue of reinforcement and the value of reinforcement. Laboratory studies have repeatedly shown the value of reinforcement in individual learning. Assuming the manipulation worked, we would expect similar findings in a field experiment in this context. One could argue that the more overt reinforcement is likely to engender a larger expectancy effect and thus stronger learning. The last hypothesis merely suggests that any activity is better than none and is an obvious reference to the control group.

Prior to examining the measures it is important to recognize that different people have different propensities and abilities to learn in different situations. It would be expected that the effectiveness of point-of-purchase devices as learning tools would be moderated by any number of variables. These could be actor-related variables such as product familiarity which will be used here, or other situational variables such as those from the typology developed by Belk (1975). An actor-based

variable - product familiarity - has been selected because of its managerial significance. It provides a clear focus of whom the target of the point-of-purchase activity should be. This study could be extended at a later date to include other actor-based variables and other situational influences, especially those pertaining to physical surroundings.

Product familiarity and its effect on learning new information has long been acknowledged in consumer behavior. Howard and Sheth (1969) consider it, as does a more recent theoretical approach to information processing by Bettman (1979). Recent research by Johnson and Russo (1981, 1984) has put some of the issues of product familiarity into perspective.

An original study by Chase and Simon (1973) has shown that people with more product knowledge learn new information better than those with less product knowledge. This is what Johnson and Russo (1984) refer to as the enrichment hypothesis. Other authors, notably Bettman and Park (1980) and Miyake and Norman (1979), found an "inverted U" pattern which seemed to indicate that highly familiar consumers searched less than those who are moderately familiar.

Johnson and Russo (1984) sought to reconcile what are apparently two conflicting hypotheses. They suggest that there are three separate skills that develop from increased familiarity. These are: superior knowledge of existing products which reduce search; superior ability to encode new information which may increase search and learning for new products; and the ability to pay attention to relevant concepts and ignore irrelevant information, thus performing a more selective search. The authors developed an experiment to test the notion that the enrichment hypothesis was the result of superior product coding and the "inverted U" hypothesis was the result of the consumer's ability to reject or eliminate useless information. The authors defined familiarity as knowledge of the product class. In their research context, automobile purchases, they studied learning under the task conditions of choice and judgement. They determined that familiarity had an enrichment effect on judgement tasks and an "inverted U" effect on choice tasks.

Normally point-of-purchase will function to stimulate choice as a reminder to the consumer or to create an impulse buy. This study points out the broader set of possibilities for point-of-purchase in that it is being used to develop long-run positive perceptions of the product class and as such is asking consumers to make judgements which eventually may lead to choice. Thus we

would expect the enrichment hypothesis to be prevalent within this research setting. In this research, product familiarity will be held at a constant low level.

The Measures

The dependent measures for this study are a series of statements that ascertain the respondent's perception of a personal computer and intention to buy. Rogers (1983) has defined five sets of variables that affect the rate of adoption of a new product. One such variable is the perceived attributes of the innovation in question. Rogers (1983) identifies five perceived attributes: relative advantage, compatibility, complexity, observability, and trialability. Ostlund (1969, 1974), Hayward et al. (1976, 1977) and Hayward (1978) have examined perceived attributes and the rate of adoption. In general, these studies support relating those perceived attributes to the rate of adoption.

Three types of measures for each dependent variable were generated especially for this study. One was a seven point scale anchored by complete agreement and complete disagreement. A second was a short vignette with a choice of five responses. The third measure was identical to the first with the exception that a pollimeter, (Lampert, 1979) was used by the respondent to provide a 0 to 100 scale. All the constructs with the exception of relative advantage used at least one of each type of indicator for hypothesis testing. At least three indicators were used for each construct with Relative Advantage and Complexity have seven and six indicators each.

Data Analysis

Data analysis, as presented here, consists of three steps. The first step profiles the respondents. The second will cover the measures and manipulation checks used in the experiment. The final step involves the statistical techniques of analysis of variance (ANOVA) and multiple analysis of variance (MANOVA) employed to test the three hypotheses.

Analysis of Respondents

There were a total of 148 respondents, 37 per experimental cell. The author examined sex, marital status, family income, age, education, occupation, and dwelling status and compared those averages for the sample against the averages for Monmouth County New Jersey, the site of the study. In all cases the data appeared to match up with the county means and medians. In addition, since a lottery was run for respondents, the

author had access to the addresses of all 229 who participated in the study. A total of 194 or 84.7 % reported residing in Monmouth County.

In order to check for random assignment to the cells, and to determine whether respondents differed across experimental cells the seven variables listed above were subjected to statistical tests as appropriate to that variable. Since age was a ratio variable it was examined using analysis of variance and Duncan's multiple range tests. The remaining six variables were tested using chi-square analysis. In all cases none of the measured variables differ between the cells. It should be noted that the variables of marital status and occupation had expected frequencies of less than five in a majority of cells and hence the chi-square test may not be valid. It appears that the random selection of people to treatment groups was effective, at least on these measured variables. This does not indicate the sample is random in terms of the dependent variables of interest, but it does provide some evidence that it may be so.

Measurement and Manipulation Check Analysis

As noted above six dependent variable constructs were measured with at least three indicators each. Intention to buy, compatibility, observability, and trialability were single identifiable constructs and thus had three indicators. The relative advantage measure was developed to have four components using seven indicators. Complexity was developed with two components and a total of six indicators.

A complete discussion of measurement testing is beyond the constraints of this paper. Briefly, correlations were examined from three indicator measures and confirmatory factor analysis was utilized on the multiple component constructs. Intention to buy was measured by the original three indicators, as were compatibility, observability and trialability. The relative advantage measure was originally constructed to have four components and seven indicators with a 2, 2, 2, 1 indicator to component fit. The single indicator of relative advantage correlated weakly with the other variables even though it was intended to be an overall measure of relative advantage. It was deemed unreliable and a three factor model, each factor having two indicators, fit. The complexity measure was developed to have two components, ease of understanding and ease of use. One indicator in the ease of use did not work and was dropped. The resulting two factor, three and two indicator model fit. Thus, this research started with six constructs and 25 indicators. Hypothesis testing will be

based on six constructs and only 23 indicators.

A summary of the measures is noted below in Table 1. Only the 23 indicators used in the analysis are included and an example of each type of indicator for intention to buy is presented.

While this experiment had obvious differences in manipulations since each computer disk had a distinctive manipulation, the purpose of the checks was to see if the manipulations were operating. A total of four manipulation checks were used. The first was embedded in the program in the form of a picture of a worm about which questions were asked after the manipulation. The worm appeared for three seconds between the second and third exercises and was meant to be humorous. It was expected that people in the interactive point-of-purchase activities would score higher, with better recall of the worm embed and its details, as they were more involved and would process information during the exercise in a broader and deeper manner. A second manipulation check was a series of self reports by the respondent on attention and interest while doing the manipulation. Again the interactive cells should produce higher self-reports of attention and interest. A third manipulation check measured the length of manipulation. On the average it was expected that more reading would mean a greater time period to complete the manipulation and thus Cell 2 would take the greatest time and Cell 3 somewhat less. The fourth cell was fixed at six minutes. Finally, the last check was the number of assists the person asked for during the manipulation. It was expected that the fully overt reinforced manipulation (FRIM) would engender more confidence and hence less assists. The noninteractive manipulation would require no assists. In general the manipulation checks are mixed and indicate weak manipulations took place. This is not an unusual occurrence in field experiments where noise and other uncontrollables make it difficult to get the kinds of manipulations that are done in more controlled environments. That these manipulation checks were generally successful in the small laboratory sample using students further illustrates this problem.

Testing of Hypotheses

Table 2 provides a summary of the hypothesis testing that is being reported here.

Each of the first two hypotheses was tested using both MANOVA and ANOVA. MANOVA was used nine times to test each of the six constructs and is appropriate for multiple indicators. Within each of the nine tests

ANOVA was used to examine the effect of each individual indicator. Each test was done on both the main effect as in the hypothesis as well as the two control effects. The control effects are hypothesis 3 and are reported as significant or not significant at the .05 level, while the main effects at the multivariate test level and the univariate test level are reported with the appropriate F test and significance level. While not explicitly reported here, both univariate contrasts and multiple range tests, Duncan, Student Newman Keuls, and Scheffe provide the basis for confirming the initial univariate results reported here. There are two control effects, with each cell compared with the control group. In Table 3-A the control effects are FRIM versus CON and NIM versus CON respectively (Cells 2 versus 1 and 4 versus 1). In Table 3-B the control effects are FRIM versus CON and NIRM versus CON (Cells 2 versus 1 and 3 versus 1). Thus the control effect of FRIM versus CON is actually reported twice.

Examining both hypotheses indicates that the main effects in general cannot be confirmed. In fact only one of the univariate measures is significant at the .05 level with only six more significant at .10. Given some 64 multivariate or univariate examinations, this is obvious. There is some evidence for the existence of control effects, a total of 31 significant control effects out of a possible 96. Moreover, they occur in measures that, from a face validity standpoint, a researcher would expect the greatest chance of success. The control effects occurred primarily in the trialability measures, 12 of 12, and the complexity measures, 9 of 21. Obviously the respondent had just completed a trial, so, even though the experiment was disguised, we would expect the kind of control group finding that occurred. Thus the perception of the trialability of the innovation would be enhanced. The control effect in the complexity measure is also expected. All respondents had little or no experience or knowledge of personal computers, and fear of technology is a well known phenomenon. That respondents got a chance to see how easy the technology is to use in all cases would account for the perception of less complexity over those in the control group.

That there were no main effects is not surprising given the manipulation check results. Every effort was made to make the exercise as realistic as possible. The manipulations, while definitive, were not strong enough to counter the noise and lack of control inherent in this field experiment.

Finally, it is notable that almost all the differences observed, while not statistically significant, were in the correct direction. Only eight of the mean comparisons

Table 1
Summary of Measurement Indicators

A. Examples of Each Type of Scale
(Intention to buy)

Seven Point Scale	The likelihood of my purchasing a personal computer during the next year is very high. Completely Agree 1 2 3 4 5 6 7 Completely Disagree
Vignette Scale	You walk into a department store which sell personal computers and walk past the computer department. A salesperson asks you when you are likely to purchase a personal computer. You reply A. I will never buy a computer B. I might buy a computer in the next 3 years C. I might buy a computer in the next year D. I might buy a computer in the next 6 months E. I want to buy a computer within the next month
Polimeter Scale	The likelihood of my purchasing a personal computer during the next year is very high. (Researcher records answer on back of scale)

B. Actual Measures Used in Analysis

<u>Construct</u>	<u>Indicator</u>	<u>Type of Measure</u>
Relative Advantage (1)	Ldthing Pollc	7 point Pollimeter
Relative Advantage (2)	Leasy Polle	7 point Pollimeter
Relative Advantage (3)	Lworth Pollj	7 point Pollimeter
Complexity (1)	Lluse Mgoperat	7 point Vignette
Complexity (2)	Lcomplex Mgunders Pollh	7 point Vignette Pollimeter
Compatability	Llifesty Mglife Pollf	7 point Vignette Pollimeter
Observability	Lknow Mgobser Pollb	7 point Vignette Pollimeter
Trialability	Letotry Mgtry Polld	7 point Vignette Pollimeter
Intention to buy	Lcopurch Mgintent Polla	7 point Vignette Pollimeter

Table 2
Summary of Hypothesis Testing

A. Hypothesis 1 and 3 FRIM versus NIM and CON						B. Hypothesis 2 and 3 FRIM versus NIRM and CON					
Dependent Variable Measure	Indicator	MANOVA/ANOVA	SIG.	Control Effects	SIG.	Dependent Variable Measure	Indicator	MANOVA/ANOVA	SIG.	Control Effects	SIG.
Rel. Advantage 1	Idothing Pollc	0.30	.745	NS	NS	Rel. Advantage 1	Idothing Pollc	0.02	.979	NS	NS
	Leasy Polle	0.44	.508	NS	NS	Rel. Advantage 2	Leasy Polle	0.04	.851	NS	NS
	Polle	0.46	.501	NS	NS	Rel. Advantage 3	Polle	0.03	.864	NS	NS
Rel Advantage 2	Leasy Polle	0.23	.799	NS	NS	Rel Advantage 2	Leasy Polle	2.37	.101	NS	NS
	Polle	0.38	.537	NS	NS	Rel Advantage 1	Polle	2.14	.147	NS	NS
	Polle	0.04	.833	NS	NS	Complexity 2	Polle	0.18	.670	NS	NS
Rel Advantage 3	Lworth Pollj	2.34	.104	SIG	NS	Rel Advantage 3	Lworth Pollj	1.29	.282	SIG	NS
	Pollj	0.42	.519	NS	NS	Complexity 1	Pollj	0.03	.519	NS	NS
	Pollj	3.14	.081	SIG	NS	Complexity 2	Pollj	2.15	.147	SIG	NS
Complexity 1	Lluse Mgooperat	2.00	.142	NS	SIG	Complexity 1	Lluse Mgooperat	1.62	.204	NS	SIG
	Pollj	0.01	.943	NS	NS	Complexity 2	Pollj	0.07	.788	NS	NS
	Pollj	3.53	.064	NS	SIG	Complexity 1	Pollj	2.93	.091	NS	SIG
Complexity 2	Lcomplex Mgunders Pollh	0.98	.406	NS	SIG	Complexity 2	Lcomplex Mgunders Pollh	0.62	.606	NS	SIG
	Pollh	0.19	.666	NS	NS	Complexity 1	Pollh	0.73	.396	NS	NS
	Pollh	1.64	.221	NS	NS	Complexity 2	Pollh	0.99	.323	NS	NS
Compatblllty	Llifesty Mglife Pollf	1.53	.201	SIG	SIG	Compatblllty	Llifesty Mglife Pollf	1.25	.268	SIG	SIG
	Pollf	0.77	.577	NS	NS	Complexity 1	Pollf	0.24	.867	NS	NS
	Pollf	0.20	.658	NS	NS	Complexity 2	Pollf	0.20	.654	NS	NS
Observability	Lknow Mgoobser Pollb	2.32	.131	NS	SIG	Observability	Lknow Mgoobser Pollb	0.06	.815	NS	NS
	Pollb	0.40	.528	NS	SIG	Complexity 1	Pollb	0.05	.820	NS	NS
	Pollb	0.23	.876	NS	NS	Complexity 2	Pollb	0.24	.867	NS	NS
Trialability	Lknow Mgoobser Pollb	0.01	.923	NS	NS	Observability	Lknow Mgoobser Pollb	2.31	.084	NS	NS
	Pollb	0.47	.493	NS	NS	Complexity 1	Pollb	3.67	.059	NS	NS
	Pollb	0.02	.984	NS	NS	Complexity 2	Pollb	4.78	.032	NS	SIG
Intention to Buy	Lknow Mgoobser Pollb	0.69	.563	SIG	SIG	Observability	Lknow Mgoobser Pollb	0.01	.927	NS	NS
	Pollb	1.49	.227	SIG	SIG	Complexity 1	Pollb	0.70	.555	SIG	SIG
	Pollb	1.59	.212	SIG	SIG	Complexity 2	Pollb	0.44	.512	SIG	SIG
Intention to Buy	Lknow Mgoobser Pollb	0.47	.493	SIG	SIG	Observability	Lknow Mgoobser Pollb	0.85	.359	SIG	SIG
	Pollb	1.43	.242	NS	SIG	Complexity 1	Pollb	1.23	.305	NS	SIG
	Pollb	0.12	.733	NS	NS	Complexity 2	Pollb	0.84	.362	NS	SIG
Intention to Buy	Lknow Mgoobser Pollb	0.89	.348	SIG	SIG	Observability	Lknow Mgoobser Pollb	3.23	.077	SIG	SIG
	Pollb	0.60	.441	NS	NS	Complexity 1	Pollb	1.19	.278	NS	SIG
	Pollb	1.43	.242	NS	SIG	Complexity 2	Pollb	1.23	.305	NS	SIG

were not in the correct direction.

Managerial Implications and Future Research

On the surface, this research seems to indicate that learning theory does not have much to contribute within the context of the study, as no main effects were demonstrated. Some control effects were found, but these were not evident consistently except in perceived trialability and perception of complexity. It would appear that any point-of-purchase activity among those offered in this research is superior to none, but that the effects are weak at best.

However, there are several issues that are worth talking about in terms of a managerial perspective. It is obvious from the manipulation check measures that one approach to the overall problem would be to have stronger manipulations. In other words, we cannot say whether the theory tested in this study is usable by the manager because we could not get a strong enough manipulation to determine this point. It does appear, however, that we can get a respondent to feel better about being able to try the machines, and to some extent have less fear of trying the machines by giving them some kind of point-of-purchase activity. Also, an examination of the means, as noted previously, has indicated that all but eight were in the correct direction, even though they were not statistically different by the criteria used in this study. Given the low costs of doing this kind of activity and that the activity may provide other advantages not directly addressed in this research, it probably makes sense for the typical retail computer store to set up several programs. Their costs are software development which is not a difficult nor overly expensive task and whatever it takes to get the consumer to utilize the point-of-purchase activity.

It should not be overlooked that the activity tested in this study does provide other benefits. It allows consumers to spend some time interacting with the product while waiting for the salespeople to answer their questions. The salespeople can spend more time with clients and be less concerned with a potential customer walking out because he could not be waited on. In addition, the consumer may learn about the product and may make better use of the salesperson's time with a stronger base of knowledge. As an example, computer point-of-purchase disks could be designed for a whole variety of learning situations and not just for novices, but also for competent users who need some information about a particular piece of software. As noted in the literature review, this activity is beginning to take place. While

the retailer may not be able to justify the expense based on this study of consumer learning, other benefits are possible and further research may well be used to explore the totality of benefits possible.

Another alternative is to provide a separate lab away from the selling floor. By providing an environment that is more conducive to learning, it is possible that the manipulations would have more effect. This is, of course, pure conjecture, but many stores have such labs and it would not be difficult to steer a person to the lab when it is not being used for classes. Again the incremental cost is probably very low. Another alternative is to attempt to provide for a stronger manipulation, while maintaining the point-of-purchase activity on the selling floor. Additional time and energy would be required in defining how this might be done and then developing the necessary software to do it. This is clearly a future research area.

Of more interest to this researcher is the implications of the study to developers of hardware and software. Again, although this study is not conclusive, there was indication of effects in the laboratory. If these could be corroborated it would seem to make sense to carefully think out the nature of the demo disk that is sent out and the disk that is used to start up the computer for new hardware sales.

In any case, more research is needed to ascertain how learning theory could be brought to bear on the computer selling situation or that of any enhanced technology product or service. At face value, learning theory should be able to contribute to the effectiveness of point-of-purchase activity within this context and in many others. The key may be in providing a strong enough manipulation in environments that may not be well suited to the activity.

This all points to the need to carefully examine the issues that have been raised in this research. At a starting point it may be useful to replicate this study both in the lab and in the field. If this study provides positive effects in the laboratory environment, but not in the field, then the issue becomes how do we get closer to laboratory conditions on the selling floor. It also provides a basis for the design and development of demonstration disks for a variety of hardware and software products. In line with that it is important to examine, not just how computer novices might react, but also determine if these techniques might also be useful for computer experts. In all probability they are, but the content of the learning disk will be different and how

we approach the reinforcements may be different.

There are some additional directions that might prove interesting and fruitful. This study has utilized positive reinforcement and it has been argued, negative reinforcement also. Under what conditions might extinction or punishment be used. Punishment is especially interesting and problematical. The authors are not terribly sure too many retail managers would want to use punishment as a means of reinforcement on their selling floors. It would be interesting to design a punishment type of reinforcement that would have little or no repercussion in a negative sense, but would be positively viewed by the respondent, and hence decrease the probability of a negative behavior. Extinction is less of a problem on the sales floor and appears to be much less applicable in the context studied here.

Finally, the above suggests a very interesting theoretical issue. That concerns itself with the transferability of laboratory testing results to non-laboratory applications. Much of the experimental work done in consumer behavior uses laboratory methodology and students. The question in these authors' minds is not the age-old argument of the use or correctness of laboratory studies or students, but under what conditions these studies are conducted. This study points out an interesting problem which is probably true of many studies in consumer behavior. There is a great deal of difficulty getting the same strength of manipulations outside of the laboratory. This may be due to a technique which cannot be replicated outside of the lab, or because other factors come into play which cannot be controlled reducing the effects and value of the work. From a manager's standpoint, what good is a laboratory finding if it cannot be duplicated in some way to benefit the manager? The study reported here could have been much more effective if a full laboratory study had been done and a replication in the field was conducted for comparison purposes.

Summary

This paper has reported on a field experiment that attempted to apply learning theory to a particular problem, that of developing a learning disk for computer neophytes to use as a point-of-purchase exercise in a retail computer store. The results of a partial pretest indicated a manipulation and the intended effect occurred. The full study done in an actual field setting of a retail computer store did not result in the intended hypotheses based on learning theory being generally supported. Some support was found for a control group effect. While it is clear that the use of these techniques has benefits other than those being statistically tested, the findings suggest the difficulty of obtaining the desired effects in a field setting. The implications for computer retail management are that the technique may be useful because of these peripheral reasons, but that to get learning effects on the sales floor, either stronger manipulations have to be developed or a more laboratory-like environment must be provided on the sales floor. This, of course, assumes that the findings of the pretest are valid, and the theory will work on the floor as indicated in the pretest. This research again points out that it is often difficult to transfer laboratory findings to actual practice, especially in the behavioral sciences. While there are many reasons for this, an interesting stream of research should be developed to examine under what kinds of conditions this transfer is likely to happen. This context may be a useful one to begin such an examination.

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