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ABSTRACT

Three purposes of a study of marketing education (ME) instructors in Tennessee were as follows: to identify the activities they perceived to be effective, to determine the perceptual style orientations of those activities as identified by experts in perceptual learning style research, and to develop a framework for instructional planning that provides ME instructors with both dimensions of the activities. First, a statewide survey of ME instructors was conducted using a list of the 62 instructional activities of the "Tennessee Curriculum Guide for Marketing Education." An 85% response rate was achieved. Next, the Delphi technique was used to classify the instructional activities by perceptual mode: print, aural, interactive, visual, haptic, kinesthetic, and olfactory. A panel of experts completed three probes and responded to a telephone interview to reach consensus on the dominant and secondary classifications for each activity. Ninety-five percent of the instructional activities were considered effective by 50% or more of the ME instructors. The 12 activities considered most effective represented a variety of perceptual study elements and four perceptual modalities: print, aural, interactive, and visual. Data from both phases of the study were used to develop a two-level framework of instructional activities arranged in order of perceived effectiveness and perceptual modality. (Contains 17 references.) (MN)

A Delphi Study for Perceptual Modality Classification of Effective Instructional Activities in Tennessee Marketing Education

by

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Currently, a great deal of attention in the United States is focused on educational reform. Concern has been expressed about the lack of academic performance in our schools, and academic decision makers are seeking new designs for improved educational achievement. While program and curriculum changes are proposed, large-scale redesign takes time. However, instructional changes within individual classrooms can be in place relatively quickly. Educators may serve the student population more effectively by using improved methods of instruction based on individualized learning.

Traditionally, our schools develop the expected intelligences: linguistic and logical. In Gardner's Frames of Mind (1983), multiple intelligences are proposed as higher domains that make up an individual's gifts or personal strengths. He theorizes that these gifts are one or more of seven intelligences. These intelligences, linked to sensory modes, are paths for accelerated learning that may be addressed by specific instructional techniques. Teaching to the individual student's learning style or perceptual modality is not a new concept but is not commonly applied in today's learning environment. Garger, a leader in learning style and curriculum design, observed, "We know that people learn differently. The problem is trying to fit this knowledge into a system that's not set up to accommodate individual differences" (O'Neil, 1990, p.6). Efforts to develop methods that address individual differences and problems common to the traditional classroom yield positive results when learning style applications are used in instruction. An effective

method of instruction which could be utilized today in learner-specific classrooms is teaching to student perceptual learning styles.

In order to address the unsatisfactory state of our educational "product" and to ease the transition into a different instructional approach, this study was pursued as one part of reform. The study is based on perceptual modality learning style and its use with effective instructional activities. The study serves to provide a link between learners who are not being effectively taught in our educational system and the effective instructional opportunities of perceptual modality learning theory.

Review of Related Literature

Individualized instruction principles may be traced to the 1890's and early 1900's and continued through the 1960's with Cronbach's hypothesis (1967) that the learning rate is central in importance and is dependent on adapting instruction. Classroom strategies that provided for a variety of instructional approaches that met the learner's needs were attempts to match the method of instruction to the type of learner (Wang, 1992). The Annehurst Curriculum Classification System (ACCS), used in the 1970's, provided a system for classifying instructional materials and linking them to different types of learners (Frymier, 1977).

Learning-style theory interpreted by Keefe (1982) includes the cognitive, affective, and physiological traits that indicate how learners react to the environment. The environmental influence was further defined by French (1975), who theorized that learning style could have four dimensions: perceptual, cognitive, social, and emotive modalities.

Perceptual learning styles received early attention through Lowenfeld (1939), who researched learning through the senses. This perceptual modality learning was later measured with the Multi-Modal Paired Associates Learning Test (MMPALT I/MMPALT II) (Gilley, 1975/1976; Cherry, 1981/1982), an in-mode test that has been used in educational research since its development in 1975. The test is for actual learning style as opposed to perceived learning style. Research shows that actual styles and perceived style instruments have a low correlation (Coolidge-Parker, 1989/1990; James & Blank, 1993). The MMPALT II measures perceptual learning style based on dominance in one of seven perceptual modes: print, aural, interactive, visual, haptic kinesthetic, and olfactory. By identifying a student's learning style and providing instruction in that mode, learning is enhanced. Matching instruction to the individual student learning style is effective in short-term recall (Cross, 1976; Cafferty, 1980/1981) and a "mismatch" of instruction to student can result in rebellion , confusion , and inappropriate behavior (Jacobsen, 1988).

Instructional activities are most effective when learners participate in instructional choices (Hart, 1983). Another strategy concept is in the multi-media approach in learning centers, contract learning, and learning activity packages where learners have a choice of what and how they learn. Group instruction serves as a positive instructional method when traditional lecture is omitted and learners may interact collaboratively (Joyce & Weil, 1972). The cooperative learning instructional method has also been effective by allowing students different roles in the learning experience.

The history of education reveals attempts to enhance learning by use of individualized instruction, perceptual learning styles, and effective instructional activities. The combination of these concepts provides an additional resource for learning.

Purpose of the Study

The purpose of the study was to provide information useful for Marketing Education instructors in applying effective perceptual modality instructional techniques. The specific purposes were 1) to identify the activities perceived by Marketing Education instructors to be effective and the perceptual style orientations of those activities as identified by experts in perceptual learning style research and 2) to develop a framework for instructional planning that provides Marketing Education instructors both dimensions of the activities as an available resource.

Three research questions were posed to guide the study:

1. What instructional activities are perceived to be most effective by Tennessee Marketing Education instructors as determined by a survey using activities drawn from the state curriculum guide?

2. How would a national panel of experts on perceptual modality classify effective instructional activities according to perceptual modality elements using the Delphi Technique?

3. Can a framework be developed to combine effective teacher-directed instructional activities as identified by instructors and perceptual modality classification as determined by consensus of expert opinion?

Methods and Procedures

The two-phase study draws on the opinions of the population of 138 Tennessee Marketing Education instructors and a panel of experts composed of ten participants secured from a national search. The panel of experts were authorities on the Multi-Modal Paired Associates Learning Test Revised (MMPALT II), an in-mode assessment of actual learning style based on individual perceptual modality strength.

In Phase I of the study, a state-wide survey of the instructors was conducted using a list of instructional activities from the Tennessee Curriculum Guide for Marketing Education. Instructors were asked to evaluate 62 instructional activities as "effective," "not effective," or "not applicable" based on their experience in the classroom. The survey was conducted during five regional meetings held across the state. The personal distribution of the survey was the factor credited with the high response rate of 85%.

In Phase II of the study, the Delphi Technique was employed to classify the instructional activities according to perceptual modes: print, aural, interactive, visual, haptic, kinesthetic, and olfactory. The panel of experts completed three probes and responded to a telephone interview to reach consensus on the dominant and secondary classifications for each activity. A pilot study for each probe was used to determine the clarity of each instrument prior to its distribution to the panel of experts.

Data secured from both phases of the study was used to develop a two-level framework of instructional activities arranged in order of perceived effectiveness and perceptual modality.

Results

Among 11 major findings are the following:

1. The large majority (95%) of instructional activities were considered to be effective by the majority (50% or more) of Marketing Education instructors.

2. The twelve activities evaluated as most effective (by 90% or more of the instructors) represented a variety of perceptual style elements. The activities include tests/quizzes/reviews, interview of the student, demonstration by the teacher, student demonstration, role play, teacher-directed group discussion, guest speaker, videotape, activities/problem solving (orally), information handouts, worksheet handouts, and teacher use of overhead projector--pictures. The activities include these perceptual modalities: print, aural, interactive, and visual. No activities in this group were classified as using the haptic and olfactory modes.

3. The perceptual modality classification of 63 instructional activities from the Tennessee Curriculum Guide for Marketing Education indicates that print is the most dominant element with 19 activities, followed by the interactive element with 16 activities, the visual element with 15 activities, and aural element with 10 activities (Figure 1). The predominant secondary element was the aural classification, which included 14 of the 40 activities selected for secondary dominance (Figure 2).

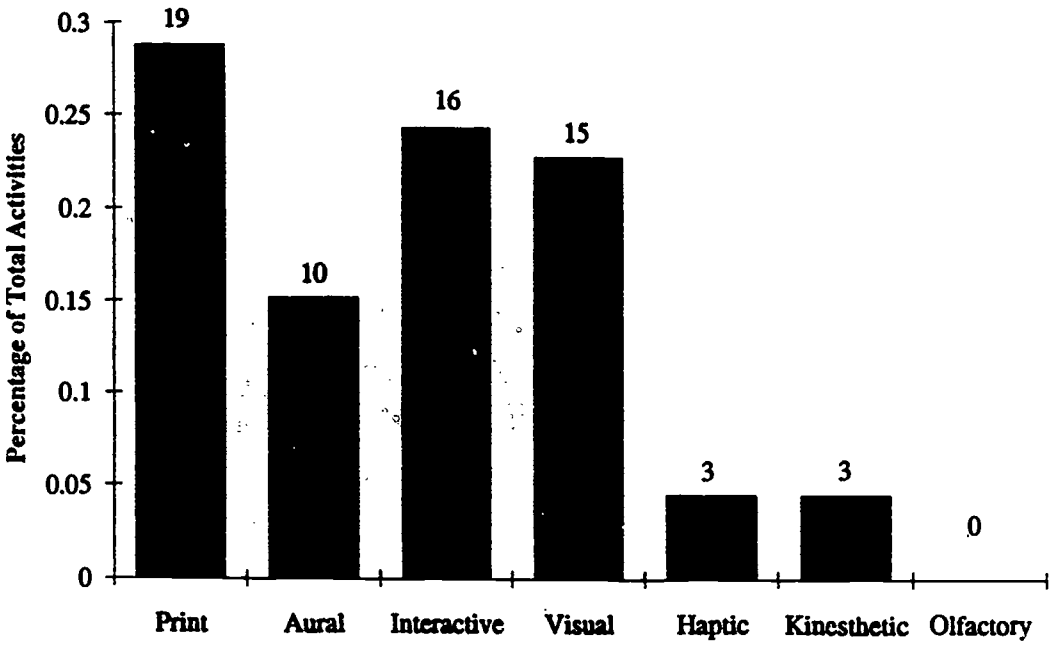

Figure 1: Summary of Dominant Classifications by Perceptual Modality Element for Marketing Education Instructional Activities

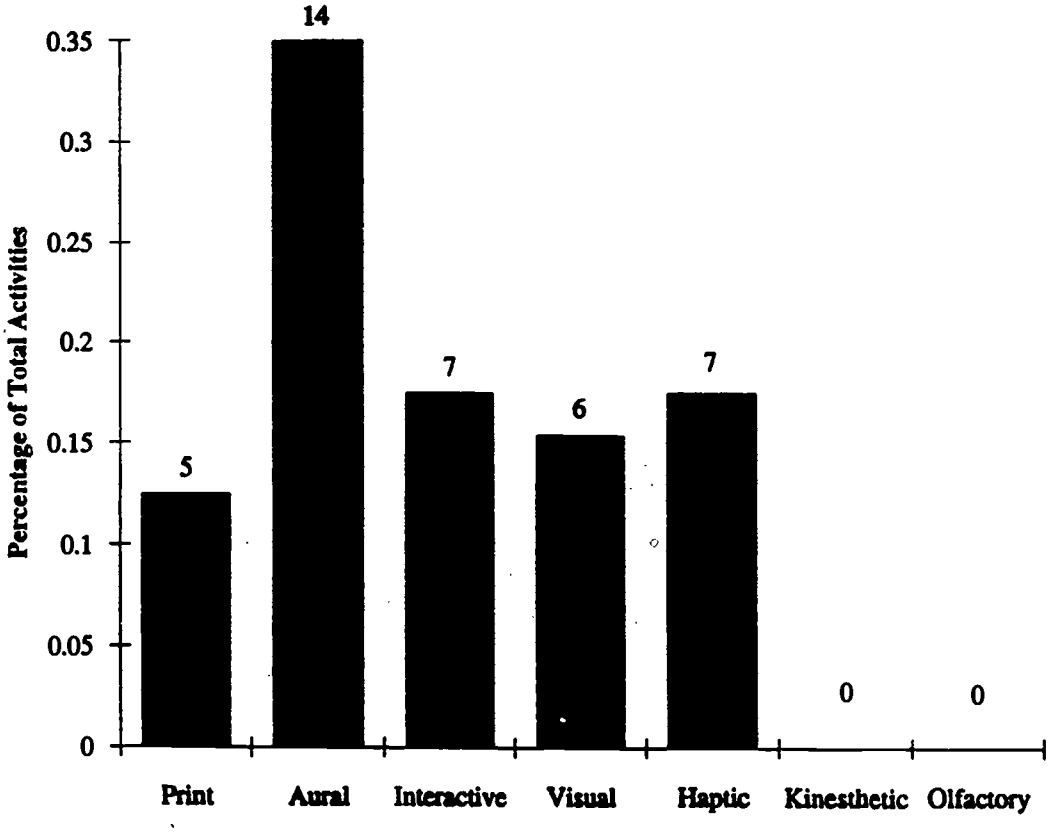

Figure 2: Summary of Secondary Classifications by Perceptual Modality Element for Marketing Education Instructional Activities

4. The classification process for instructional activities listed in the curriculum guide resulted in a small representation of element dominance for haptic and kinesthetic activities with three activities in each element group. No activities were classified as olfactory on either the dominant or secondary level.

5. As a confirmation of the perceptual modality classifications, the Delphi panel of experts rated their level of acceptance as high for the final classification assignments using dominant and secondary perceptual elements. The high acceptance level for dominant activities was true for 93% of the panel members and was determined by combining the acceptance level of all activities for all panel members.

6. Written communication from the panel of experts both on the Delphi instruments and as response to interview questions was combined with the final classification results to compile discussion themes regarding perceptual modality classification. Issues that emerged from the Delphi exploration dealt with lack of agreement by the panelists on how to classify several different learner actions. One was the activity of speaking only. Talking and listening actions were classified as predominantly interactive with aural as the secondary element. Another question that panelists continued to debate was the classification of print versus haptic activities where writing or keyboarding was involved. Classification of the 15 writing activities resulted in their assignment as print. Three of those activities were designated haptic for secondary classification. The three computer activities were ultimately viewed as dominantly visual or print rather than haptic. Panelists indicated that classification would depend on the individual learner and was contingent on whether the exercise was new learning and

whether it was based on the learner's muscle memory. Panelists also expressed another consideration: when a variety of instructional activities are offered, what the learner chooses is "learner-directed" and is usually his/her best mode for learning. For example, notetaking from reading was ultimately classified as print, but if the learner chooses note-taking as a way to remember information, it could be haptic for the haptic learner.

The issue of group activities resulted in several themes. Of the 14 group activities, 11 were classified as interactive. The informality of group activities allows more freedom or flexibility to the learner in modes of access. A group activity typical in Marketing Education is a moving, doing project rather than a discussion. This type of activity allows for the informed division of duties in project completion. In group activities learners often choose to access the information through their own modes and still function as part of the group. It was suggested by panelists that individual activities should include some freedom of choice so that instructional activities are not limited to teacher-directed methods.

Summations may be made from panelists' comments and resulting classifications about the movement senses often included in group activities. Classification of kinesthetic and haptic activities may be determined by weighing the difference in gross and fine motor skills. Kinesthetic classification does not necessarily include walking as a learning mode when it is considered to be a method of transportation. The three activities classified as dominant kinesthetic involved limited learner walking and potentially more movement of other body parts.

When considering benefits to the learner, two issues were discussed by the panelists and are summarized. First of all, two different learners may access the same information within an instructional activity through two different modes, and each can benefit equally. An activity may be dominant in one mode but provide equal learning opportunities to two different types of learners. Secondly, a difference may exist between how information is presented versus how information is retained. If information is presented in print but is remembered in the visual mode, the question becomes, is learning stronger when elements of presentation and retention are paired?

7. When data from Phases I and II of the study were combined to create a framework for instructional use (Figure 3), activities representing six of the seven dominant perceptual modality elements were included. An analysis of the framework shows the dominant interactive element activities as the most effective (77.8%) based on the collective average of effectiveness of activities (Phase I) within each perceptual modality group. (The researcher acknowledges possible skew of data by combining the percentages of effectiveness within each element group.)

Conclusions

Among the conclusions of the study, the following are presented:

1. The instructional activities provided in the curriculum guide, regardless of perceptual modality classification, were considered to be effective by the majority of Marketing Education instructors.

2. The selection of activities could be improved with more activities in the perceptual modes of haptic, kinesthetic, and olfactory.

Framework for Perceptual Modality Instruction

Level I-Predominant Learner Styles

Visual

- Demonstration by the Teacher
- Videotape
- Teacher Use of Overhead Projector--Pictures, Artwork
  - Oral Presentation
- Field Trip
- Television
- Use of Pictures, Photos
  - Display and/or Bulletin Board Construction
- Use of Graphs, Tables
  - Arrangement of Merchandise or Cash
- Films, Filmstrips
  - Taking of Physical Inventory
- Collage, Poster Development
- Board and Card Games
- Cut/Paste Examples
- Computer Instruction Simulation
- Computer-Assisted Tutorial
- Slides with Audiotape
  - Brochure Development
  - Drawing or Painting
  - Change Maker Machine

Interactive

- Interview of the Student
- Role Play
- Teacher-Directed Group Discussion
  - Activities/Problem Solving (Orally)
- Activities/Problem Solving (in Groups)
- Brainstorming
- Oral Presentation
- Communication with a Business (in Person)
- Group Project
- Cooperative Learning Groups
  - Marketing Simulation Workbooks
  - Library Research
- Display and/or Bulletin Board Construction
- Student Interview of Others
- Survey Conduction
- Student-Directed Panel Discussion
- TV Spot Production
- Use of the Telephone
- Debate
- Radio Spot Production
  - Plays, Skits
  - Board and Card Games

Haptic

- Tests, Quizzes, Reviews
- Worksheet Handouts
- Group Project
- Display and/or Bulletin Board Construction
- Arrangement of Merchandise and Cash
- Collage, Poster Development
- Student-Generated Listing
- Cut/Paste Examples
- Drawing or Painting
- Change Maker Machine

Level II-Less Predominant Learner Styles

Aural

- Teacher-Directed Group Discussion
  - Interview of the Student
  - Demonstration by the Teacher
- Guest Speaker
  - Videotape
- Activities/Problem Solving (Orally)
  - Activities/Problem Solving (in Groups)
  - Brainstorming
- Field Trip
  - Television Program
  - Communication with a Business (in Person)
- Note Taking (from Teacher Lecture)
- Lecture
  - Student Interview of Others
  - Survey Conduction
  - Student-Directed Panel Discussion
- Use of the Telephone
  - Debate
- Audiotape
  - Slides with Audiotape
- Recitation by Others
- Use of Records, Compact Discs

Print

- Tests, Quizzes, Reviews
- Information Handouts
- Worksheet Handouts
- Letter Writing
- Teacher Use of Overhead Projector (Printed Information)
- Note Taking (from Reading)
  - Note Taking (from Lecture)
- Activities/Problem Solving (in Writing)
- Marketing Simulation Workbooks
- Written Reports
- Form Completion
  - Use of Graphs, Tables
- Textbook Chapter Exercises
- Library Research
- Word Puzzles
- Computer Quizzes/Tests
- Questionnaire Development
- Student-Generated Listing
  - Computer Instruction Simulation
  - Computer-Assisted Tutorial
- Learning Activity Packages (LAPS)
- Reading Assignment
  - Radio Spot Production
- Brochure Development

Kinesthetic

- Student Demonstration
- Take Physical Inventory
- Plays, Skits

Olfactory

(none)

Note: Secondary indented and arranged by perceived effectiveness.

3. Based on past MMPALT II research, perceptual modality styles most predominant in learners are listed by hierarchy as visual, interactive, haptic, aural, print, kinesthetic, and olfactory. Perceptual dominant elements represented in the guide and listed in high frequency order are print, interactive, visual, aural, haptic, kinesthetic, and olfactory. When comparing the two areas, predominant learner styles versus perceptual elements represented in the curriculum guide, the representation of activities is not congruent with learner needs as determined by perceptual modality studies.

4. The Delphi process was effective as a convergence technique to analyze panelist input, to identify issues, and to classify the instructional activities.

Importance

The sequence of the study provided first-time opportunities both for educators and for Delphi panel members. Marketing Education instructors had their first opportunity to evaluate the effectiveness of instructional activities provided in the state curriculum guide and received a summary of the effective activities. The Delphi panel of experts was also first to classify instructional activities as to the predominant perceptual modality using the MMPALT II elements. The resulting instructional framework with ordered perceptual modalities and effective activities can serve as a resource to instructors in guiding and individualizing classroom instruction. The study serves as a foundation to educate instructors about perceptual modes, individualized instruction and the importance of varied instructional activities in reaching the student population.

Recommendations

1. Marketing Education curriculum developers should seek to expand the range of activities listed in the Tennessee Curriculum Guide for Marketing Education. The guide should include more activities in haptic, kinesthetic, and olfactory perceptual element modes. Few of these types of activities appear in the current curriculum guide.

2. It is further recommended that the haptic, kinesthetic, and olfactory elements may be used to develop more multi-modal activities to be included in future curriculum development. The additional element modes could be combined with existing activities in the element group determined as most effective: interactive.

3. The study should be replicated in other curricular areas and in Marketing Education programs in other states to see if similar ratings might occur for effectiveness of the instructional activities and their classifications for perceptual modality.

4. Further study is recommended in the area of paired perceptual element learning in which information is presented in one mode and retained in a different mode or when modes are used by the learner simultaneously.

5. Another area for future study is the equal access to knowledge by different perceptual learners regardless of the classification order of dominant or secondary element. In addition, learners may access information differently than the classification indicates based on their ability to adapt from receiving information in one perceptual mode to retaining that information through a different mode. No research has been done on these questions using the MMPALT II, and issues related to these questions were expressed by the study's Delphi panel of experts.

The process of improving the educational system, and specifically instructional methods, should center around the needs of the individual learner. By using appropriate instructional techniques, activities, and resources, educators may enhance learning and knowledge retention and maintain a positive learner mind-set for future education. Instructors should continue to seek better ways to reach the individual who is often forced to learn in large group settings. By providing instructors with an instructional resource that addresses the individual in each instructional activity, individualized instruction can be implemented more easily. With a perceptual modality framework, instructors have a concise and effective resource for planning classroom instruction that addresses the needs of the individual learner.

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