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ABSTRACT

A study identified and analyzed the learning preferences of 17 seriously and chronically mentally ill adults participating in the rehabilitative psychosocial therapy program at the Toxaway Church Site of the Anderson Mental Health Center. Staff perceived as boring and unfocused the traditional treatment approach that relied mainly upon chemotherapy and recreational activities that were not individualized or designed to develop specific life management skills. Learning styles of the patients were tested and identified, and data were analyzed to determine individual and group learning needs. Data analysis indicated that chronically mentally ill adults did have unique learning strengths and weaknesses that could be identified. Twelve patients tested neutral on motivation to learn, two tested high, and three tested low. Sixty-five percent did not prefer to learn in a variety of ways; they had very specific ways that they preferred to learn. Eighty-eight percent preferred structured learning, 65 percent chose to learn with peers, and 76 percent preferred to have authority figures present while learning. Recommendations included testing of all patients in the rehabilitative psychosocial therapy program and development of a treatment program that used learning styles in a therapeutic educational approach. (Appendixes include 51 references, productivity environmental preference survey, individual profile, and learning preferences of the patients tested.) (Author/YLB)

IDENTIFICATION AND ANALYSIS OF LEARNING PREFERENCES OF MENTALLY ILL ADULTS IN REHABILITATIVE PSYCHOSOCIAL THERAPY AT THE ANDERSON MENTAL HEALTH CENTER

Theory and Methods of Adult Education

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A Practicum Report presented to Nova University in partial fulfillment of the requirements for the degree of Doctor of Education

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Identification and Analysis of Learning Preferences of Mentally Ill Adults in Rehabilitative Psychosocial Therapy at the Anderson Mental Health Center

Michael K. Newman

May, 1993

The purpose of this study was to identify and analyze the learning preferences of the seriously and chronically mentally ill adults participating in the rehabilitative psychosocial therapy program at the Toxaway Church Site of the Anderson Mental Health Center.

This study was precipitated by ongoing staff complaints to the Coordinator of the Community Support Program (CSP) regarding the unchallenging, unstimulating, and non-growth-producing treatment being

provided to the center's seriously and chronically mentally ill adult patients. The traditional treatment approach that mainly relies upon chemotherapy (psychotropics) and various recreational activities that were not individualized nor designed to develop specific life-management skills was perceived by staff as boring and unfocused.

The CSP coordinator, as a result of complaints, decided to try a new approach to treatment--identify the perceptual strengths and weaknesses of 17 patients at the Toxaway site and, later, develop an individualized, therapeutic educational modality designed around and inclusive of the individual and group learning needs of the patients. All 17 patients' learning styles were tested and identified, and the data were analyzed to determine individual and group learning needs.

The analysis of data indicated that chronically mentally ill adults do have unique learning strengths and weaknesses that can be identified. Some remarkable findings were that 12 of the patients out of 17 tested neutral on motivation to learn -- only two tested high and three tested low. Sixty-five percent of the patients did not prefer to learn in a variety of ways; they have very spepcific ways that they prefer to learn. Even more noteworthy was that 88% preferred structured learning, 65% chose to learn with peers, and 76% preferred to have authority figures present while learning.

After learning preferences have been identified, as was demonstrated by this study, subsequent treatment can be developed that utilizes learning styles in a therapeutic educational approach. It was therefore recommended to the CSP coordinator that all patients in rehabilitative psychosocial therapy programs be tested, and that the above treatment program be developed.

TABLE OF CONTENTS

TABLE OF CONTENTS (Contd.)

LIST OF TABLES

Chapter 1

INTRODUCTION

The Anderson Mental Health Center is a small, urban community, outpatient, psychiatric treatment facility established under the South Carolina Department of Mental Health. It is a state-supported, medical model, nonprofit institution, charged with the responsibility for servicing the mental and emotional needs of primarily indigent individuals and families in the Anderson, Oconee, and Pickens counties.

The Anderson center is the main office with Oconee and Pickens operating as satellites. Total staff approximate 100 professional and support positions serving clients on a walk-in, first-come, first-serve basis, with or without the ability to pay. Those who do pay for services, pay according to their ability determined by the use of a sliding scale, or use a third party vendor such as medicaid or a private health insurance plan.

The services of the centers are divided into units. Each center has an adult unit, child and adolescent unit, drug and alcohol service, and a community support program. Each unit is staffed by several professionals who are trained as either psychologists, social workers, guidance counselors, nurses, or in the ministry.

The adult unit staff provide individual and group counseling and psychotherapy to individuals and couples who are not diagnosed as psychiatrically disabled. Staff in the child and adolescent unit provide group, individual, and family counseling and psychotherapy to children and adolescents who may or may not be diagnosed as emotionally disturbed. The clinicians in the drug and alcohol services provide individual, group, and family counseling to clients who are diagnosed with some form of drug or alcohol abuse or dependency. These clients may also be dually diagnosed with a psychiatric problem as well.

The Community Support Program (CSP) provides individual case management, medication compliance group activities, and various treatment approaches for seriously and chronically mentally ill adult clients who participate in residential and day programs. One of the day programs managed by the CSP unit is the Toxaway Church site that provides rehabilitative psychosocial therapy to an average census of 15-18 adult clients (age 18 and above) who are seriously and chronically mentally ill. Most of the clients are diagnosed with some form of schizophrenia, and some are dually diagnosed with schizophrenia and mild to moderate mental retardation.

Background and Significance

As a result of ongoing Community Support Program (CSP) treatment staff complaints to both the Director and Assistant Director of the Community Support Program (CSP) regarding an absence of stimulating, challenging, mind-expanding treatment approaches for the clients in rehabilitative psychosocial therapy (RPT) programs, the Director of CSP decided to experiment with a new method of treatment (K. Sanders, personal communication, February 1, 1993).

RPT staff have been and are voicing their disapproval of the current treatment program being used in the rehabilitative psychosocial therapy (RPT) service at the Toxaway Church Site. By their verbal reports in staff meetings, they and the participating clients are most often bored, and are feeling burned out. The staff believe, unanimously, that these feelings are due to treatment practices that are lacking a systematic approach that provides for stimulating, challenging, knowledge--and skills--expanding activities that can be individualized and measured for effectiveness.

Since the inception of the RPT program, staff have routinely designed a monthly calendar of activities for the participating clients that included such activities as: hit the ball, bingo, color a picture in a coloring book, write a letter to a friend or family member, decide what

snacks to eat today and assist with their preparation, and play the game "Simon Says." These activities require little or no concentration, abstract thinking or problem solving skill, nor do they teach useful information or skills that can enrich their lives or expand their life management abilities; there is also no means for measuring what the clients gained, if anything, from their participation.

As a result of this constructive input, the Director of CSP decided to use the Toxaway RPT program as the site for a pilot project that would provide an enhanced treatment program designed around the use of learning styles to create therapeutic learning experiences for seriously and chronically mentally ill adults. Before the new approach to treatment could be implemented, however, all of the 17 clients needed to be tested to determine their learning preferences.

After the clients' have been tested, learning preferences have been identified, and the data have been analyzed, the RPT clinicians can subsequently design therapeutic, metacognitive, multisensory learning experiences and activities that may be more challenging and engaging for both clients and therapists. If this proves to be the case, therapists and clients may feel more stimulated and face less probability of burnout. This may reduce CSP staff complaints and provide clients with a better opportunity to reach certain existing program objectives: increased

concentration, enhanced problem solving skills, and expansion of knowledge and skills needed for effective life management (K. Sanders, personal communication, February 1, 1993).

Purpose of the Investigation

The purpose of this research practicum was to identify and analyze the learning preferences of the 17 seriously and chronically mentally ill adults participating in the rehabilitative psychosocial therapy (RPT) program at the Toxaway Church Site of the Anderson Mental Health Center. The analysis would include a numerical summary of the learning preferences of individual patients as well as a numerical summary of group preferences. Numerical summaries would also be converted into percentages to reveal the proportions of the total group who do or do not prefer to learn in certain ways with certain conditions present. It is anticipated that the findings of the study will be used to develop a therapeutic metacognitive, multisensory, experiential treatment program that is intended to challenge both therapists and clients by increasing program requirements for concentration, problem solving, comprehension, and application of new knowledge.

This descriptive research was intended to build the foundation upon which a therapeutic model for educational therapy (Maultsby, 1990) could be structured that would provide an andragogical approach (Knowles,

1980; Knowles, 1989) to the treatment of seriously and chronically mentally ill adults. This would reverse the current practice of unrelated activities that are neither relevant (stage and phase related) nor systematic with regard to some semblance of linearity that integrates with a lifelong learning process.

Research Question

The research question for this descriptive research study was: What will the Productivity Environmental Preferences Survey (PEPS) instrument reveal about the learning preferences of the seriously and chronically mentally ill adults participating in the rehabilitative psychosocial therapy program at the Toxaway Church site of the Anderson Mental Health Center?

Chapter 2

REVIEW OF THE LITERATURE

An extensive review of the literature was conducted to locate a reliable and valid instrument for diagnosing perceptual strengths and weaknesses of adults, and to gain the required level of skill for administering the test and analyzing the resulting data (DeBello, 1990; Dunn & Dunn, 1993; LaMothe, et al., 1991; Price, Dunn, & Dunn, 1991). An attempt was made to review the findings of other studies that dealt with the diagnosing of learning styles of seriously and chronically mentally ill adults, but none could be found in the literature. Therefore, the results of related studies with various other populations were used to guide this research (Andrews, 1990; Baker III, Roueche, & Gillett-Karam, 1990; Bell, 1984; Bowen, 1982; Branton, 1966; Carbo, 1980; Carbo, 1993; Carbo, Dunn, & Dunn, 1991; Chandler, 1991; DeBello, 1990; DeGregirusm 1986; Dunn & Dunn, 1993; Dunn & Griggs, 1990; Dunn, Krimsky, Murray, & Quinn, 1985; Ellis, 1985; Gardner, 1985; Griggs & Dunn, 1988; Guilbault & Paul, 1993; Hodges, 1985; Jalali, 1989; Kiplinger & Kiplinger, 1989; LaMothe, et al., 1991; Lam-Phoon, 1986; Lemmon, 1985; MacMurrren, 1985; Mitchell, 1991; Murray, 1980; Nganwa-Baguman, 1986; Parnell, 1990; Pearce, 1992; Pizzo, Dunn, &

Dunn, 1990; Price, Dunn, & Dunn, 1991; Pogrebin, 1991; Radliffe II, 1991; Routh, 1991; Shea, 1983; Tait, 1992; Virostko, 1983; and others).

"There are 83,248 public schools in the United States. Many of these schools are failing" (Pogrebin, 1991). The human casualties of this "apocalypse now" are the "27 percent, or one out of four students, who leave school before completing their high school diploma" (Carbo, 1993; Mitchell, 1991; Parnell, 1990, p. 21). If we combine the numbers of students who drop out with those who remain in school (at least for the present), but who are below grade level, the percentage for Whites is at the 74.8% level, Blacks at 48%, and Hispanics at almost the same level as Blacks--48.8% (Pearce, 1992).

At the rate of approximately 1 million each year (Carbo, 1993), academically ill-prepared students are being jettisoned into a beleaguered adult population of some 20 to 30 million Americans who cannot read or write. What is more alarming is that 20% of the high school students who remain in school until graduation are functionally illiterate (Mitchell, 1991), and only 4.8% of America's graduating class can work math on a high school level (Pearce, 1992).

Matters get worse when the focus is narrowed to Afro-Americans. Approximately 44% of Black men are high school dropouts, and are functionally illiterate (Radliffe II, 1991). The justice system in America

sends more Black men to prison each year than to college, and prison costs four to five times more (Pogrebin, 1991). Even though Black males represent only 6% of the total population, 47% of prison inmates are Black males, and they constitute only 3% of the national college enrollment figure (Carbo, 1993).

If one were to wonder why this nation's prisons are overcrowded and why early release programs are common practice, one would need to look no farther than the local high school: 62% of prison inmates are high school dropouts (WYFF TV, 1991); add this number to the more than one in two welfare recipients who also leave school before graduation (WYFF TV, 1991) and the value of education, as a tax supported institution, can no longer be regarded by some in the agricultural community as a luxury for seasonal pursuit (migrant workers and others). What does all of this have to do with the Anderson Mental Health Center?

Approximately 20 to 30% of the seriously and chronically mentally ill adults being treated by the Anderson Mental Health Center are school dropouts, either illiterate or functionally illiterate, former or habitual criminals, and recipients of welfare programs. (k. Sanders, personal communication, March 3, 1993). An educational approach to their treatment has not been tried but may be more rehabilitative than the

current practice of medications and recreational games alone (Montagnon, 1993).

"[T]he teacher's ability to improve, motivate, and influence a [learner's] abilities and capabilities to be a [learner]" (Baker III, Roueche, & Gillett-Karam, 1990, p. 9) establishes the relationship between teaching and learning. The teacher's central task" is to enable the learner to perform the tasks of learning" (Baker III, Roueche, & Gillett-Karam, 1990, p. 10). When this mission is not accomplished, business and industry are forced to take up the slack, and consumers bear the brunt of these efforts as reflected in higher prices for products purchased.

Consumers also bear the costs for the treatment of the mentally ill adults being treated by the state agencies such as the Anderson center. Many of these patients were warehoused in state mental institutions in the past, and are now being warehoused in local communities--an improvement for the most part over traditional treatment, but proactive efforts to re-engage mentally ill adults in productive activities are few and far between (Montagnon, 1993).

According to the former Secretary of Education, T. H. Bell, this country needs educational reform and reform should focus on the goal of creating a "Learning Society;" a commitment to life-long learning.

Society needs to honor the belief that education is important not only because of what it contributes in material rewards, but also because of the value it adds to the general quality of one's life (Bell, 1984). Further, if the schools, in cooperation with government, industry, families and communities, do not work to make society a mirror image of what is taught in the schools, the outlook for quality education for all is bleak at best (Bowen, 1982).

The Anderson Mental Health Center is using traditional treatment for chronically mentally ill adults; this approach also needs reform (K. Sanders, personal communication, March 3, 1993). Adult patients, too, can be involved in lifelong learning. According to the South Carolina Commissioner of Mental Health (J. Bevilacqua, personal communication, March 4, 1993), mentally ill adults need to learn life management skills that will enable them to return to their own community where they can live in the least restrictive living arrangement, but also gain the means for increasing the general quality of their lives. Therefore, treatment should not be directed merely at controlling the symptoms of chronic mental illness, but also directed at producing knowledge and skills that enrich one's life (J. Bevilacqua, personal communication, March 4, 1993).

Marie Carbo (1980), who founded the National Reading Styles Institute and developed the Reading Styles Inventory (RSI), identified the

perceptual strengths (auditory, visual, or tactual) of kindergartners. She taught 60 words to each child--20 through phonics (auditory), 210 through linguistics (visual) and 20 using a tactual approach. All 60 children achieved significantly higher scores on immediate recall ($p < .01$) and later recall ($p < .05$) when taught through their perceptual strength.

Chronically mentally ill adults under treatment at the Anderson Mental Health Center are not learning to read nor improve their reading level. This may be rectified through the use of Carbo's successful method once their learning--and reading--styles have been identified. As mentioned previously, many of the adult patients cannot read or read on a very low reading level.

Time of day or chronobiological preferences are equally important (Carbo, Dunn & Dunn, 1991). "Whenever a class is in session, it is the wrong time of day for almost one third of its students . . . (Staff, 1992, p. 9). Murray (1980) compared learning styles of seventh and eighth grade, low-achievers. She discovered that many of the females preferred learning in the evening, whereas male counterparts preferred learning in the afternoon.

Andrews (1990) found that 55 of his underachieving elementary students were "morning birds," 70 were "night owls," 44 were late-

morning preferents, and 100 were virtually non-functional in the morning, but came alive in the afternoon. After accommodating his individual students' chronobiological needs, their scores on the California Achievement Tests in reading and math went from the 30th percentile in 1986 to the 83rd percentile in 1989. Virostko (1983), among others, also discovered that matching elementary students' reading and mathematics instruction to their preferred time of day significantly ($p < .001$ increased their test scores over the scores they achieved when mismatched.

Gadwa and Giannitti's (Staff, 1988) study of junior and high school students' chronobiological preferents revealed that one-third of junior high and two-thirds of high school students learn best in the early morning. The majority of both groups prefer to learn during the hours of 11:00 a.m. and 3:30 in the afternoon. Approximately 13% prefer "late night." This would seem to place a greater emphasis on homework instead of classwork for these particular students, as well as point out a need for "shift-learning" (industry has offered "shift-work" for many years).

From a cultural perspective, Asian college students preferred early-morning learning much more often than their caucasian counterparts (Dunn & Griggs, 1990). Mexican-Americans shared an early-morning preference with Asians, but disliked afternoon learning (Lam-Phoon,

1986). Later in the day was preferred by Caucasians, African-Americans, and Greek elementary students (Jalali, 1989).

The chronically ill adult patients at the Anderson center were not previously tested to determine their learning strengths and weaknesses using the Price, Dunn, & Dunn Productivity Environmental Preference Survey. This instrument helps in identifying the time of day that adults prefer to learn (or receive educational therapy). There is no reason why therapy has to be provided to all patients at the same time (8:30 a.m. to 5:00 p.m.)

When a person is seated on a conventional classroom chair, approximately 75% of the body weight is supported on only four square inches of bone. This places a great deal of stress on the lower back and buttocks, and often causes fatigue, discomfort, and a need for frequent mobility (Branton, 1966). Teachers most often do not understand that children who are not sufficiently well-padded biologically, cannot sit on a hard seat for more than 10-12 minutes.

Many otherwise healthy, active students, whether global (right brain, deductive thought processors) or analytic (left brain, inductive thought processors), find it impossible to concentrate on new and difficult material when seated on wooden, plastic, or steel seats, but do earn statistically higher achievement test scores in relaxed, informal seating

(Hodges, 1985; Nganwa-Baguman, 1986; Shea, 1983). Many of these students learn and retain more, and enjoy school better when they can be active learners, rather than passive (Dunn, et al., 1986).

Approximately 40% to 50% of adolescents find it difficult to sit in traditional classroom desks for more than 20 minutes, and the impact is greater on boys than girls. In fact, Lemmon (1985) and Griggs and Dunn (1988) reported statistically higher standardized test scores in reading and mathematics when students were permitted to sit comfortably during test-taking.

Just as the traditional classrooms require students to stay seated (no moving around) and to be passive learners (lecture, seat work), so does traditional treatment of chronically mentally ill adults at the Anderson center. Patients can be engaged in active, educational therapy, and experiential learning.

Just as important as matching learning and reading styles with instructional style, and accommodating time-of-day preferents (chronobiological needs) and formal versus informal classroom structure, is the need to permit students who require sound while learning, to listen to easy-listening music with headphones so as not to distract others. DeGregoris (1986) discovered that some people think better while listening to soft music-without lyrics--than in quiet. Students in study

groups achieved significantly better in the environment that responded to their learning style (whether quiet or allowing for music) (Pizzo, Dunn, & Dunn, 1990).

If listening to soft music--without lyrics--can enable certain younger students to concentrate better and improve their learning, it may also work with chronically mentally ill adults. The patients at the Anderson Mental Health Center (who may require quiet to learn) are not provided structured learning environments that accommodate their need to learn independently while wearing headphones that channel in easy-listening music.

Another important consideration for the classroom, if achievement is vital, is an understanding of some students' need to snack while learning. MacMurren's (1985) study revealed that many students concentrate better while studying if allowed to eat, drink, or chew. This is a privilege that can be granted so long as students keep the classroom clean, and eat and drink healthy foods and beverages.

The Anderson Mental Health Center does not include in their budget the various nutritious snacks and beverages that certain patients require to facilitate their learning. The adult patients who need intake while learning, therefore, are not being appropriately accommodated.

Research also indicates that lighting (whether dim or bright) affects 70% of students' achievement. Dunn, Krimsky, Murray, & Quinn (1985) reported that speed and accuracy, as well as achievement, increased merely when illumination was complimentary to individual preferences. These researchers also discovered that the amount of light with which analytics feel comfortable causes hyperactivity and nervousness among global students.

All of the lighting at the Anderson center is the same--very bright. No considerations have been made to make lighting adjustments that would be more appealing to those who prefer dim or soft light.

Both practicing educators and those conducting research in education are convinced that almost all students can learn if they are given instruction that allows them the opportunity to stretch their minds (Lindeman, 1961) in the areas where they are most intelligent and that also accommodate their learning strengths. Group paced learning that emphasizes competition against normative criteria (instead of criterion referenced forms of evaluation), and that values only the linguistic and logical-mathematical domains of intelligence, will not bring forth the unique learning capabilities of all students (Gardner, 1985; Guilbault & Paul, 1993).

Seriously and chronically mentally ill adults at the Anderson center are not given educational therapy (intended to bring about measures of psychosocial rehabilitation) that stretches their minds and allows them to use the attributes in which they are most strong. Nor are the adult patients in the community support program (CSP) or RPT program treated with group-paced or individually-paced activities that are specifically designed to stimulate their intelligence (there is no system for focused planning of therapy).

The factory assembly lines begun at the inception of the industrialized era no longer exist for the most part and, therefore, there is no further need for the 1950s educational model that requires students to restrain from eating, chewing, drinking, spitting, moving, lying down, teaching each other (used to be called cheating), and to sit quietly in straight-back, hard seats positioned in rows facing a lecturing teacher (Pearce, 1992). Today's workers need to know how to be active learners who can cooperate in problem solving teams with other workers. They need to be able to talk, eat or drink, and move around as needed to carry out the business of learning. This is the only way for students to discover their unique gifts and to latch onto the skills that they need to be competent learners (Dunn & Dunn, 1993; Guilbault & Paul, 1993).

The treatment program at the Anderson Mental Health Center is a much improved system for the treatment of seriously and chronically mentally ill adults when compared to the 1950s model; however, most of the improvement has been made with the use of chemotherapy or psychotropics (Montagnon, 1993). The psycho-social dimension of therapy is still very unscientific (not systematic nor measurable). Even though the South Carolina Department of Mental Health (J. Bevilacqua, personal communication, March 4, 1993) and the state medicaid guidelines require individualized treatment for each patient (as with the school system that requires the same), this is implemented on paper, but the intent is lost in practice (K. Sanders, personal communication, March 3, 1993; Montagnon, 1993).

Recent research reveals that whenever a person focuses on new and/or difficult information with the intention to learn, that person literally grows more brain--increases the number of links or connective tissue between brain cells (also referred to as dendrites). The more the learner is challenged the more the brain produces new strans or dendrites (Guilbault & Paul, 1993); this process can occur even into old age, and this explains why almost anyone can learn (Ormrod, 1990).

The chronically mentally ill adults at the Anderson center are not being engaged in treatment activities that allow them to focus on new

and difficult information. They are not given learning experiences that require them to concentrate with the intention of learning new knowledge or skills and, thus, there are no opportunities to grow dendrites.

Everyone has many different intelligences. Howard Gardner (1985), renowned psychologist who spent several years (with the financial backing of a grant) researching the roots of intelligence, believes that he has discovered seven kinds of intelligence: linguistic (verbal), logical-mathematical, musical, interpersonal, intrapersonal (introspective), spatial, and bodily-kinesthetic. Scientists believe that the more a person is given the opportunity (and uses it) to indulge his or her natural intelligence, the happier the person will be (Guilbault & Paul, 1993). If a person has a strong aptitude for something, he or she has to use it or face unhappiness. It is the reason some adults never advance in their work. Kids may become discipline problems or dropouts, bored or frustrated when what they are good at is not recognized (Guilbault & Paul, 1993).

The clinicians at the Anderson Mental Health Center do not assess the individual patients' natural intelligences (their stronger intellectual attributes). Therefore, they are not given the opportunity to identify what they do best, nor are they permitted to indulge their unique talents and receive the sense of well-being that accompanies that activity.

Students need to learn to think about their thinking (metacognition) in an environment where they feel safe, secure, loved, and respected (Chandler, 1991; Ellison, 1993). Teachers need to have high expectations for students both academically and behaviorally (Chandler, 1991).

The treatment program for chronically mentally ill adults at the Anderson center does not provide opportunities for patients to think about their thinking, nor to attempt increased self-awareness about how they think; there are no programmed, practice activities that provide a milieu of safety, security, love, and respect to nurture the development of thinking skills.

The goals of education need to be about creating students who (1) know how to learn (2) communicate well with a variety of other people (3) concentrate well (4) can get whatever information they need (5) feel deeply, and (6) act wisely (Guilbault & Paul, 1993). Good schools are places that create opportunities for students to talk to teachers, to other students, and take information and do something with it (Kolb, 1984); where teachers personalize themselves with students; where teachers may cover less content, but with more depth, more meaning, and more understanding; and where the theme of the learning process is, "How do people, events, and conditions influence change" (Pearce, 1992).

The goals of treatment at the Anderson Mental Health Center are very similar to the goals for education recommended in the program produced by Guilbault and Paul (1993); however, the treatment program for adult patients does not provide the opportunity for patients to learn new information and do something with it. Nor are patients taught how people, events, and conditions influence change.

Chapter 3

METHODOLOGY AND PROCEDURES

The procedures for conducting this descriptive research study began with an extensive review of the literature to select an instrument to identify the perceptual strengths and weaknesses of adults participating in a learning milieu, administer the instrument, and then analyze the resulting data.

A computer search was conducted to assess available literature in both ERIC and the social sciences using the descriptors: perceptual styles, cognitive styles, learning styles, metacognition, intelligence, learning styles tests, survey administration, questionnaire administration, survey analysis, and questionnaire analysis. Books, journal articles, dissertations and films were reviewed in addition to conducting personal interviews and attending related workshops to develop skills in these areas (Andrews, 1990; Branton, 1966; Carbo, 1980; Carbo, 1993; Carbo, Dunn, & Dunn, 1991; DeBello, 1990; Dunn & Griggs, 1990; Gardner, 1985; Griggs & Dunn, 1988; Guilbault & Paul, 1993; Hodges, 1985; Jalali, 1989; LaMothe, et al., 1991; Lam-Phoon, 1986; Mitchell, 1991; Murray, 1980; Nganwa-Baguman, 1986; Pearce, 1992; Price, Dunn, & Dunn, 1991; Shea, 1983; Virostko, 1983; and others).

The most helpful sources of information were the Productivity Environmental Preference Survey handbook by Price, Dunn, and Dunn (1991) that provided the wherewithal for administering and then identifying the perceptual strengths of the chronically mentally ill adults tested. A second source was the film produced by Guilbault and Paul (1993) that summarized the most recent research in the area of educational reform. A third source was Dunn and Dunn's (1993) book that elaborated on numerous research that has been completed in the area of learning styles.

In this study, all 17 (100%) of the seriously and chronically mentally ill adult clients (patients) participating in the Toxaway Church rehabilitative psychosocial therapy (RPT) program (a section of the CSP or Community Support Program) were tested with the Productivity Environmental Preference Survey (PEPS) instrument (see Appendix A) to identify their learning preferences (see Appendix B).

Price, Dunn and Dunn (1991) developed the 100 statement PEPS instrument in 1967 based on their theory that individuals have unique learning styles (this includes chronically mentally ill adults). Since the inception of the instrument 26 years ago, numerous pieces of research have been conducted using the instrument resulting in significant findings (Dunn & Dunn, 1993). Several researchers have also studied the

instrument to test its reliability and validity (DeBello, 1990; Dun & Dunn, 1993; LaMothe, et al., 1991; Price, Dunn, & Dunn, 1991) and found it to be among the highest of over a dozen similar learning styles surveys.

Beaty (1986) concluded that if teachers are going to implement a learning styles instructional approach (or if clinicians are going to implement a therapeutic educational program), that they need to use a commercially standardized test to identify their students' (patients') learning styles. The Learning Styles Inventory (LSI) and the Productivity Environmental Preference Survey (PEPS)--for adults--have been proven to have high reliability and validity (DeBello, 1990; LaMothe, et al., 1991), and are commercially available for purchase and scoring (Price, Dunn, & Dunn, 1991).

Since the total number of clients to be tested in this study was relatively small, there was no need to use a random sample (Isaac & Michael, 1990). Also, a random sample would not have produced the specific information needed to individualize a therapeutic learning treatment program that accommodates the unique learning requirements of each patient.

The PEPS instrument was administered by three RPT clinicians under the direction of the Assistant CSP Coordinator (the researcher) utilizing a small group clinician-to-client average ratio of one to three; it

was not possible to maintain the attention of all 17 clients in one large group. The clinicians served in the roles of coach, interpreter, and supporter as he or she read each statement to a group of approximately three clients: interpreting a statement when one or more clients appeared to be unclear as to the meaning of the statement, coaching the clients to give their best answer, and providing reassurance and praise after the completion of each statement in order to keep the clients from getting excessively distressed, and to maintain their attention (keep them on task).

The clinicians administering the PEPS test (after being trained by the Assistant CSP Coordinator) covered an average of 15 statements out of the total of 100 at each RPT session. This was expected to take, and actually did take, an average of 30 minutes per session. Thirty minutes was the average length of time that these clients could maintain their attention and provide what appeared to be reasonably accurate answers to the 100 survey statements.

Since there were 100 test statements on the PEPS instrument (see Appendix A), the total estimated time required to complete the PEPS tests for all 17 clients was approximately seven to eight hours, and this proved to be accurate. The RPT program meets Monday through Friday from 1:00 p.m. to 4:00 p.m. (three hours a day); therefore, allowing 30

minutes of the three hour program each day to complete approximately 15 statements required 15 to 16 days, or approximately three weeks to complete the 100 statements on each PEPS instrument.

After the PEPS answer sheets had been completed, the Assistant CSP Coordinator sent them to Price Systems in Lawrence, Kansas (Price, Dunn, & Dunn, 1991) for computer scoring. When the profiles for all of the clients had been returned, all 17 profiles were analyzed by the Assistant CSP Coordinator (the researcher) to identify the specific learning strengths and weaknesses of each client. A composite analysis of the whole group was also completed to determine the numbers and percentages of patients who prefer, do not prefer, and have no preference for each of the 20 learning elements included in the 100 statements on the PEPS instrument.

Definition of Terms

In this study, learning preferences, learning styles, perceptual styles, and cognitive styles are used synonymously, as are the terms client and patient. Learning style is defined as: "[T]he way in which each learner begins to concentrate on, process, and retain new and difficult information" (Dunn & Dun, 1993, p. 2). Metacognitive is defined as the process of thinking about your thinking and how you conduct the thinking, learning, problem solving process.

Multisensory is defined as the process of utilizing the senses of hearing, seeing, touching, and using the whole body to learn new and difficult information according to the prioritized sequence of learning preference--primary preference first, secondary next, and tertiary last to reinforce previously learned knowledge or skills (Dunn & Dunn, 1993).

Therapeutic learning experiences are structured learning activities that alternately engage both the mental and affective domains of the learning apparatus ("the functional machinery by means of which a systematized activity is carried out" [Merriam & Caffarella, 1991, p. 42]). The intention is to provide the learner with information and skills in a manner that requires a degree of concentration that is sufficiently challenging so as not to produce boredom, yet not so demanding as to create excessive stress or frustration. Further, the learning experiences and activities are designed to produce successful outcomes, as well as vital information and skills for life management, that induce the client's sense of achievement and accomplishment and, thus, enhances his or her feeling of self-worth, self-confidence, and personal competence. This process, then, becomes a therapeutic experience for the client.

Assumptions

It was assumed that the PEPS instrument is valid and reliable (DeBello, 1990; LaMothe, et al., 1991; Price, Dunn, & Dunn, 1991). It was assumed that the RPT clients would be able to provide accurate answers to the PEPS statements with coaching from the RPT staff. And, it was further assumed that the Assistant Director of the CSP unit, as a result of extensive training, had obtained the necessary knowledge and skill required to interpret the data solicited from the administration of the PEPS instrument.

Limitations

One limitation of this study was that the RPT clients may not be capable of providing accurate perceptions of their learning preferences due to their severe mental illness. Another limitation was that the RPT clients may be too cognitively impoverished to benefit from the results of this study.

Chapter 4

RESULTS

Numerous journal and newspaper articles, books, films and published and unpublished dissertations were consulted, as were experts in the field by means of personal interviews and workshops attended, as a means to acquire greater knowledge and skills in the subject area of perceptual learning, its diagnosis, and interpretation for treatment planning. No studies could be found in the literature that used a learning styles inventory to test and then plan treatment for chronically mentally ill adults..

Among the sources of information used in this study were (Andrews, 1990; Branton, 1966; Carbo, 1980; Carbo, 1993; Carbo, Dunn, & Dunn, 1991; DeBello, 1990; Dunn & Griggs, 1990; Gardner, 1985; Griggs & Dunn, 1988; Guilbault & Paul, 1993; Hodges, 1985; Jalali, 1989; LaMothe, et al., 1991; Lam-Phoon, 1986; Mitchell, 1991; Murray, 1980; Nganwa-Baguman, 1986; Pearce, 1992; Price, Dunn, & Dunn, 1991; Shea, 1983; Virostko, 1983).

DeBello (1990) and LaMothe, et al. (1991) provided the information needed to decide upon a valid and reliable instrument to survey perceptual strengths and weaknesses of the seriously and chronically mentally ill adults at the Anderson Mental Health Center. Price, Dunn,

and Dunn (1991) supplied the (PEPS) Productivity Environmental Survey used in this study, and Price Systems in Lawrence, Kansas, machine scored the answer sheets. Dunn & Dunn (1993) was a most useful guide in administering the PEPS instrument and in interpreting the resulting data.

Table 1 lists 18 learning elements (first column) that can influence a patient's ability to receive new or difficult information, understand it, use it to solve problems, and store it for future use. The second column is a listing of the number of patients (out of a total of 17) who have a preference for each of the 18 learning elements. Column three indicates those patients who have more than just a preference--a strong preference for one of the 18 elements. The fourth column converts the number of patients preferring each of the 18 learning preferents to a percent of the total number of patients studied (17). Column five does the same thing for the patients with a strong preference for each of the 18 elements. Column six provides a combined total of patients preferring or strongly preferring the various learning elements, with column seven providing a combined percentage of the 17 patients who either prefer or strongly prefer to have each of the 18 elements present when they are learning new or difficult information or skills (see Table 1).

Table 1

Learning Elements Rated Either "Prefers" or "Strongly Prefers"

	Number Prefers	Number Strongly Prefers	% Prefers	% Strongly Prefers	Total	Total %
1. Quiet	2	--	12	--	2	12
2. Bright Light	8	--	47	--	8	47
3. Warm	4	1	24	6	5	29
4. Cool	1	--	6	--	1	6
5. Informal Design	3	--	18	--	3	18
6. Structure	7	8	41	47	15	88
7. Peers	8	3	47	18	11	65
8. Authority Figures Present	7	6	41	35	13	76
9. Learn in Several Ways	1	6	6	35	7	41
10. Auditory	6	--	35	--	6	35
12. Tactile	4	--	24	--	4	24

N = 17

(table continues)

Table 1

Learning Elements Rated Either "Prefers" or "Strongly Prefers"

	Number Prefers	Number Strongly Prefers	% Prefers	% Strongly Prefers	Total	Total %
13. Kinesthetic	6	--	35	--	6	35
14. Intake	1	--	6	--	1	6
15. Evening	3	--	18	--	3	18
16. Late Morning	2	4	12	24	6	35
17. Afternoon	5	1	29	6	6	35
18. Mobility	10	--	59	--	10	59

N = 17

According to the data reported in Table 1, almost one-fourth (24%) of the patients preferred to learn tactually item (12), (using their hands to touch and manipulate while learning). Twenty-nine percent wanted to be warm while learning, item (3). More than one-third (35%) of the 17 patients preferred to learn in the late morning, item (16), and an equal number preferred to learn in the afternoon, item (17). Thirty-five percent preferred to learn by hearing, first (auditory), item (10), and another 35%

preferred to learn by using their large muscle groups or whole body (kinesthetic), item (13), in the act of learning.

Approximately one-half (47%) of the patients preferred bright, item (2), rather than dim or softer light while learning. Forty-one percent preferred to learn visually, item (11), as their primary preferment. More than half (59%) expressed a need to move around while learning (mobility), item (18).

The largest number of patients (88%) preferred their learning activities to be structured, item (6). The second largest group (76%) preferred authority figures present, item (8), while learning. The third highest percentage (65%) of the 17 patients chose to learn with peers, item (7), rather than in one of the other sociological categories offered.

The learning elements receiving the lowest scores were: learning in the evening (18%), item (15); informal room design, item (5), while learning (18%); preferring to learn in several ways, item (9), or with variety (12%); preferring quiet, item (1), while learning (12%); desiring to snack or drink beverages (intake), item (14), while learning (6%); and preferring a cool environment, item (4), during learning activities (6%).

Table 2 includes the nine learning elements rated by the patients as either strongly do not prefer or do not prefer when learning new or difficult information. The nine learning elements in column one are:

structure, variety, auditory, visual, tactile, intake, late morning, afternoon, and mobility (see Table 2).

Column two in the table is a reporting of the number of patients who have a strong preference against the nine elements being present while they are learning. Column three reflects the number of patients who have a moderate distaste (do not prefer) for the various learning elements in Table 2. The fourth column lists the percentages strongly not preferring the nine learning elements out of the total of 17 patients, and the fifth column describes the do not prefer percentages.

The sixth column combines the numerical ratings of the 17 patients for the nine learning elements. The last column gives the combined percentages of patients strongly not preferring and not preferring each of the nine elements.

Table 2

Learning Elements Rated Either "Strongly" Do Not Prefer or Do Not Prefer

	Strongly Do Not Prefer	Do Not Prefer	% Strongly Do Not Prefer	% Do Not Prefer	Total	Total %
1. Structure	--	1	--	6	1	6
2. Variety	7	4	41	24	11	65
3. Auditory	--	1	--	6	1	6
4. Visual	--	6	--	35	6	35
5. Tactile	--	3	--	18	3	18
6. Intake	--	2	--	12	2	12
7. Late Morning	1	2	6	12	3	18
8. Afternoon	--	2	--	12	2	12
9. Mobility	--	1	--	6	1	6

N = 17

The data in Table 2 reveal that 65% (11 patients) of the patients do not prefer to learn in a variety of ways (learn in several ways), item (2). Thirty-five percent (6) do not want to learn visually, item (4).

Eighteen percent (3) respectively, did not choose to learn by tactile means (by touch and manipulation), item (5); and were against

learning in the late morning, item (7). Two (12%) of the patients did not want to eat or drink, item (6), while learning nor learn in the afternoon, item (8). Only one patient each (6%) preferred not to learn auditorily, (item 3); with structure, item (1); and with the opportunity to move around, item (9), (mobility).

In the last table, Table 3, are described the three learning elements that were rated either low or high by the 12 patients tested. In column one are listed the learning elements of motivation, persistence, and responsible/conforming.

Column two of Table 3 and column three, respectively, provide the number of patients who rated the three learning elements as either low or high. Columns four and five are a reporting of the percentages of patients who scored either low or high, respectively, on the three learning elements.

Table 3

Learning Elements Rated Either Low or High

	Rated Low	Rated High	% Low	% High
Responsible/Conforming	10	0	59	--
Persistence	1	6	6	35
Motivation	3	2	18	12

N = 17

Table 3 shows that 59% (10 out of 17) of the patients are low in the area of responsibility or willingness to conform with directions given, none scored high. Six of the 17 patients (35%) are persistent or carry out their tasks to completion before starting a new project (complete one thing before starting another); six percent (1) scored low in this area. Eighteen percent (3) were rated low in motivation; and 12% (2) scored high in motivation.

Chapter 5

DISCUSSION, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Discussion

The purpose of this descriptive research was to administer the (PEPS) Productivity Environmental Preference Survey to 17 seriously and chronically mentally ill adults, then analyze the resulting data to identify learning preferences for each individual patient, and the group as a whole. The literature did not reveal any previous studies of this nature. The literature however did provide guidance as regards which valid and reliable instrument to use with adults to identify their perceptual strengths and weaknesses, proper survey administration, and analysis of data.

The results of this study indicate that the seriously and chronically mentally ill adults who were tested at the Toxaway Rehabilitative Psychosocial Therapy program facility -- as a group -- are neither analytic nor global as learning style preferents; they tend, instead, to have few strong preferences for one or another of the learning style elements. In the vast majority of the learning style categories, less than one third of the patients revealed a preference for or against a particular style of learning.

Out of the 21 learning style elements rated, only six received enough scores to represent greater than 50% of the participants either preferring, not preferring, or scoring low in one of the various categories. Sixty-five percent of the patients preferred not to learn in a variety of ways, 59% scored as non-conformist, almost 50% (47%) preferred bright light while learning, 76% wanted to have authority figures present, and 88% preferred structured learning; these are analytical traits. On the other hand, 65% of the patients preferred to learn with their peers -- a global characteristic. The vast majority of patients, however, showed no preference for or against the other 15 learning style elements.

Research indicates that approximately 30% of students in classrooms K-12 have auditory strengths, 35% of the adult patients did; 40% of the student population are visual learners, none of the 17 patients preferred to learn visually, but 35% preferred not to; and only 15% of all students have tactile/kinesthetic strengths, 24% of the adult patients preferred tactile learning and 35% preferred kinesthetic -- more than twice as many in the general student population.

Even though only a minority of the patients studied had either analytic or global learning characteristics and, thus, as a group, the majority of patients are what is referred to as balanced learners (they have no preferences nor strong preferences as regards how they learn

except in certain situations or under certain conditions), there are some group learning preferences that are noteworthy and need to be considered when designing subsequent treatment: many of these patients need a learning environment that accommodates their non-conformity. They need to have choices about when, where, and how they learn, and need to be given a choice about how they can demonstrate what they have learned as well as an explanation of the personal relevancy of what they are learning. Almost half of the group (41%) prefers to learn in a variety of ways (even though 65% prefer not to) and, thus, need options other than just visual or auditory learning. More than half of the group (59%) need to be able to move around while they learn; they do not learn well sitting in hard, straight-back chairs facing a lecturing teacher. Half the group needs bright light and the other half needs soft light during learning activities; 65% of the patients need the opportunity to learn in small groups (cooperative learning) with their peers; 76% need a learning environment with authority figures close by to provide support, guidance, and stimuli to enhance motivation for learning; and a whopping 88% need for their learning to be well structured instead of leaving it to them to decide what, how, and when they will learn.

The findings reference the need to individualize treatment of seriously and chronically mentally ill adults in the same way that research has shown the need to individualize the instruction being provided in classrooms across the nation. Each patient, just as each student, has a unique learning or treatment style -- one method of instruction or treatment does not accommodate the existing variety of learning preferences.

Conclusions

The perceptual preferences of adults who are seriously and chronically mentally ill can be identified through the administration of the PEPS instrument. The resulting data can also be analyzed and then used to develop a treatment program whose focus is therapeutic education.

Mentally ill adults are capable of learning in much the same ways as the literature reveals about students in grades K-12, they each have their unique learning styles that seek accommodation in the various areas of the physiological, psychological, sociological, and environmental domains. With proper sensitivity to the needs of learning adults, they, too, can regain or perpetuate their quest for andragogy or lifelong learning. Mental illness does not have to be who a person is; it can be, instead, one condition to be considered when planning and developing

treatment programs that teach life management skills with an additional emphasis on life-enriching experiences.

Implications

The Community Support Program (CSP) Coordinator can use a valid and reliable (and cost effective) test to identify the perceptual strengths and weaknesses of seriously and chronically mentally ill adults being treated in the rehabilitative psychosocial programs at the Anderson Mental Health Center. After learning needs have been determined, therapeutic educational services could be developed.

A shift toward using unique learning styles of individual patients as a foundation for designing therapeutic experiences and activities that have a combined mission of teaching life management skills and enriching the lives of the chronically mentally ill, could transform the current traditional approach to treatment that has been viewed by clinicians at the Anderson center as dull, boring, unchallenging,, and lacking in knowledge--and skill-expanding results, into a mutually stimulating process for both clients and therapists. If therapists and patients can see some linearity to their treatment process that also has built-in measures to gauge progress, there may be a resulting lessening of complaints from clinicians and patients.

Recommendations for the Improvement of Practice

It is recommended that the Community Support Program Coordinator at the Anderson Mental Health Center routinely test seriously and

chronically mentally ill adult patients participating in the rehabilitative psychosocial therapy programs to identify their perceptual strengths and weaknesses. It is further recommended that test results be used to individualize patient care as regards accommodating each patient's unique learning needs.

All staff providing services in the various rehabilitative psychosocial therapy programs should receive training that will produce the skills needed for test administration and analysis. Staff will also need initial and ongoing training as regards methods, strategies, and resources required for establishing and reaching the various therapeutic educational goals and objectives, in addition to developing criterion-referenced evaluation materials to measure learner patient progress.

If adult patients are routinely tested to identify learning needs, and those needs are accommodated in a manner that promotes individualized, therapeutic education to enhance patients' life management skills and quality of life, patients and staff should experience a challenging, rewarding, and growth-producing engagement that reduces staff burn-out and patient dissatisfaction.

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APPENDIXES

Appendix C

Learning Preferences of Seriously and Chronically Mentally Ill Adults

Learning Element	Strongly Do Not Prefer	Do Not Prefer	Neutral	Prefers	Strongly Prefers	Low	High
Sound	--	--	17	--	--	--	--
Quiet	--	--	15	2	--	--	--
Bright Light	--	--	9	8	--	--	--
Dim Light	--	--	17	--	--	--	--
Warm	--	--	13	4	--	--	--
Cool	--	--	16	1	--	--	--
Formal Design	--	--	17	--	--	--	--
Informal Design	--	--	14	3	--	--	--
Motivation	--	--	12	--	--	3	2
Persistence	--	--	10	--	--	1	6
Responsible/ Conforming	--	--	7	--	--	10	--
Structure	--	1	1	7	8	--	--
Peers	--	--	6	8	3	--	--
Alone	--	--	17	--	--	--	--
Authority Figures	--	--	4	7	6	--	--
Present-Learn in several ways	7	4	4	1	1	--	--
Auditory	--	1	10	6	--	--	--
Visual	--	6	4	6	1	--	--
Tactile	--	3	10	4	--	--	--
Kinesthetic	--	--	11	6	--	--	--
Intake	--	2	14	1	--	--	--
Morning	--	--	17	--	--	--	--
Evening	--	--	14	3	--	--	--
Late Morning	1	2	8	2	4	--	--
Afternoon	--	2	9	5	1	--	--
Mobility	--	1	6	10	--	--	--

FORM #8

LAST NAME FIRST

GRADE OR EDUCATION

PRINT INSIDE BOXED IN AREA ONLY

USE A NO. 2 PENCIL. DO NOT FOLD OR STAPLE

DO NOT MARK HERE

SEX FEMALE ○ MALE ○

IDENTIFICATION NUMBER

BIRTHDAY YEAR MONTH

SPECIAL CODES

Major or Occupation

CP91-0001

Write your name, sex, and birthdate in the space provided. Blacken the bubbles below each of the boxes you filled out.

Read each statement and decide to what extent you would agree or disagree, with that statement if you had something new or difficult to learn. Mark (SD), if you strongly disagree, or (D), disagree, or (U), uncertain, or (A), agree, or (SA), strongly agree, as the response that best describes how you feel most of the time. Give your immediate or first reaction to each question. Please answer all the questions on both sides of form.

1. I prefer working in bright light. ..... SD D U A SA
2. I like to work alone. ..... SD D U A SA
3. It is easy for me to concentrate late at night. ..... SD D U A SA
4. I like to draw or use diagrams when I work. ..... SD D U A SA
5. I often have to be reminded to complete certain tasks or assignments. ..... SD D U A SA
6. The one job I like doing best, I like to do with an expert in the field. ..... SD D U A SA
7. I can think better lying down than sitting. ..... SD D U A SA
8. I prefer cool temperatures when I need to concentrate. ..... SD D U A SA
9. I can block out noise or sound when I work. ..... SD D U A SA
10. People keep reminding me to do things. ..... SD D U A SA
11. It is difficult for me to concentrate when I am warm. ..... SD D U A SA
12. The one job I like doing best, I do with two or more people. ..... SD D U A SA
13. I often work in an area where the lights are shaded. ..... SD D U A SA
14. When I concentrate I like to sit on a soft chair or couch. ..... SD D U A SA
15. I usually finish what I start. ..... SD D U A SA
16. The things I remember best are the things that I hear. ..... SD D U A SA
17. I enjoy tasks that allow me to take breaks. ..... SD D U A SA
18. I can work more effectively in the afternoon than in the morning. ..... SD D U A SA
19. I like to "snack" when I'm concentrating. ..... SD D U A SA
20. When I have a lot of work to do I like to work with several colleagues. ..... SD D U A SA
21. Noise or extraneous sound usually keeps me from concentrating. ..... SD D U A SA
22. I often forget to do the things I've said I would do. ..... SD D U A SA
23. I take lots of notes in a lecture, to help me remember. ..... SD D U A SA
24. I like to work or analyze an assignment with another individual. ..... SD D U A SA
25. I prefer cool temperatures when I'm working. ..... SD D U A SA
26. The one job I like doing best, I do with several people. ..... SD D U A SA
27. I concentrate best in the late afternoon. ..... SD D U A SA
28. The things I remember best are the things that I read. ..... SD D U A SA
29. I usually complete tasks that I start. ..... SD D U A SA
30. I can concentrate better when I sit up rather than when I recline. ..... SD D U A SA
31. I like to learn or work with a person in authority. ..... SD D U A SA
32. I work best early in the morning. ..... SD D U A SA
33. I get a lot done when I work on my own. ..... SD D U A SA
34. When I work I turn all the lights on. ..... SD D U A SA
35. I prefer that others share responsibility for a task we're doing. ..... SD D U A SA
36. I really enjoy television. ..... SD D U A SA
37. I like either a teacher or supervisor to outline tasks I have to complete. ..... SD D U A SA
38. I like to sit on a straight-back chair when I concentrate. ..... SD D U A SA
39. I work or study best by myself. ..... SD D U A SA
40. I can remember things best when I study them in the evening. ..... SD D U A SA
41. The things I remember best are those I have seen in a book or magazine. ..... SD D U A SA
42. I always finish tasks that I start. ..... SD D U A SA
43. If I have to learn something new, I prefer to learn about it by hearing a record, tape, lecture. ... SD D U A SA
44. I am most alert in the evening. ..... SD D U A SA

INDIVIDUAL PROFILE

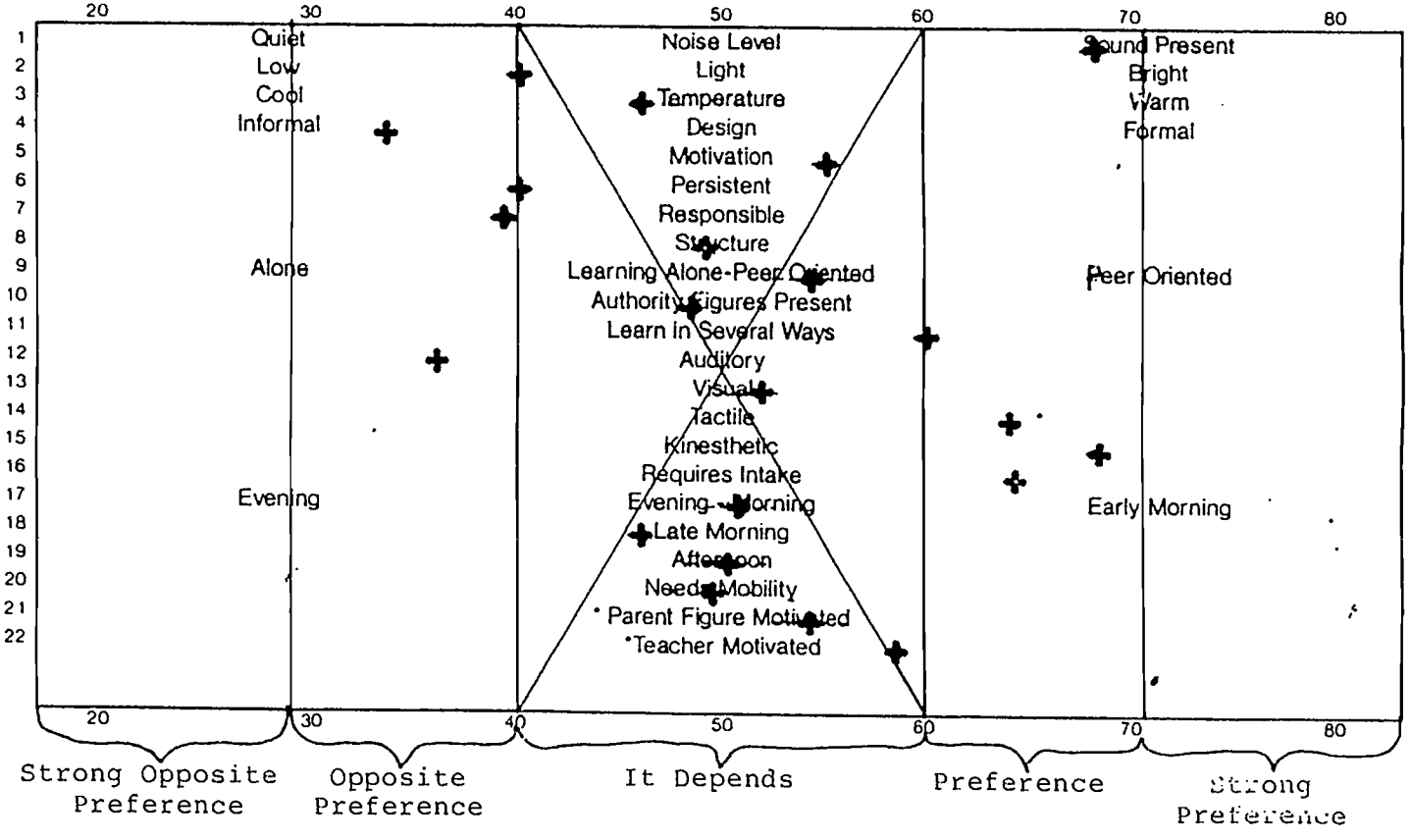
LEARNING STYLE INVENTORY

Name: Sex: F Year in School: 10 Date of Birth: 73 / 10 (Yr./Mo.) I.D. No.:

Group Identification: Special Code: Date: 11-24-1989 Group No.: 999

PREFERENCE SUMMARY

Raw Score	Standard Score	
22	68	1
9	40	2
16	46	3
4	33	4
33	55	5
14	40	6
9	39	7
12	49	8
25	54	9
12	48	10
17	60	11
10	36	12
10	52	13
23	64	14
32	68	15
24	64	16
16	51	17
10	46	18
16	50	19
14	49	20
18	54	21
22	58	22



CONSISTENCY; 100

Appendix B
Individual Profile

61

PROFILE NO.: 66 2

Appendix C

Learning Preferences of Seriously and Chronically Mentally Ill Adults

N = 17 Learning Element	Strongly Do Not Prefer	Do Not Prefer	Neutral	Prefers	Strongly Prefers	Low	High
Sound	--	--	17	--	--	--	--
Quiet	--	--	15	2	--	--	--
Bright Light	--	--	9	8	--	--	--
Dim Light	--	--	17	--	--	--	--
Warm	--	--	13	4	--	--	--
Cool	--	--	16	1	--	--	--
Formal Design	--	--	17	--	--	--	--
Informal Design	--	--	14	3	--	--	--
Motivation	--	--	12	--	--	3	2
Persistence	--	--	10	--	--	1	6
Responsible/ Conforming	--	--	7	--	--	10	--
Structure	--	1	1	7	8	--	--
Peers	--	--	6	8	3	--	--
Alone	--	--	17	--	--	--	--
Authority Figures	--	--	4	7	6	--	--
Present-Learn in several ways	7	4	4	1	1	--	--
Auditory	--	1	10	6	--	--	--
Visual	--	6	4	6	1	--	--
Tactile	--	3	10	4	--	--	--
Kinesthetic	--	--	11	6	--	--	--
Intake	--	2	14	1	--	--	--
Morning	--	--	17	--	--	--	--
Evening	--	--	14	3	--	--	--
Late Morning	1	2	8	2	4	--	--
Afternoon	--	2	9	5	1	--	--
Mobility	--	1	6	10	--	--	--