

INTEGRATION OF HOLLAND'S MODEL OF VOCATIONAL PERSONALITY TYPES AND KOLB'S MODEL OF AND LEARNING ABILITIES AND STYLES

5.1 INTRODUCTION

This chapter attempts an integration of Holland's model of personality types and Kolb's model of learning abilities and styles. Information on the Holland personality types and Kolb's learning abilities and styles reported in Chapters 3 and 4 of this study will be used in conjunction with relevant research findings reported in this chapter to develop an integrated model.

5.2 RESEARCH ON VOCATIONAL PERSONALITY TYPES, LEARNING ABILITIES AND STYLES

5.2.1 Holland's vocational personality types

Holland's theoretical descriptions of the six vocational personality types namely, Realistic, Investigative, Artistic, Social, Enterprising and Conventional, are summarized in Table 3.1. Research findings on the personality characteristics of the six vocational personality types are summarized in section 3.2.1.3. Descriptions for each of the six personality types compiled from these reported research findings are given below. In most aspects they confirm the theoretical descriptions.

Realistic

Realistic persons are generally somewhat introverted, tough-minded, objective, self-reliant, realistic and practical. They are careful, conventional, conservative, controlled and socially precise. They are reserved, detached and critical and have little anxiety or apprehension. They have high spatial aptitude and form perception.

They appear self-assured and relatively free from worry, and may come across as somewhat reserved or interpersonally distant. They may focus on the function and purpose of objects and not place much value on aesthetic qualities.

Investigative

Investigative persons tend to be more intelligent with good reasoning skills, introverted, reserved, detached, independent, self-sufficient and resourceful. They are emotionally stable, trusting and adaptable with a liberal outlook. They are self-assured, confident, controlled, socially precise and relaxed. They have high verbal ability, numerical and spatial aptitude.

They appear interpersonally reserved and tend to be objective and unsentimental. They have good reasoning ability and are curious and open-minded about new approaches.

Artistic

Artistic persons tend to be characterised by emotional reactivity and sensitivity, and tension. They are imaginative, experimenting, expedient, liberal in outlook and open to change. They are easily upset, suspicious, self-opinionated, undisciplined, careless, apprehensive, worrying, tense and driven. Indications of both introversion and extraversion have been reported and artistic persons have been described as both reserved, detached, independent, self-sufficient, resourceful and self-reliant, as well as dominant, assertive and socially bold. They have high verbal ability, clerical perception and spatial aptitude.

Artistic persons are sensitive and interested in aesthetic matters. They are curious and open to new ideas and experiences, but can also be critical. Being preoccupied with their ideas and thoughts, they tend not to be practical. They are independent and socially bold, enjoying social situations. They are also expedient choosing to operate by their own rules, rather than those of their culture.

Social

Social persons tend to be extroverted, group oriented and group dependent. They are outgoing, warm, receptive and personally open. They are lively and socially bold and have also been described as independent. They have good reasoning skills and have been found to have good motor coordination.

They prefer doing things with a group rather than alone. They are open to new ideas and are prepared to reveal personal matters about themselves.

Enterprising

Enterprising persons are extroverted. They are described as group dependent as well as independent. They are outgoing and participating, enthusiastic, dominant, venturesome and socially bold. They are emotionally stable, self-assured and relaxed. They are conscientious, persevering, shrewd, controlled, socially precise, tough minded and objective.

They are gregarious and enjoy social interaction, but are also assertive and venturesome. They can also be tough-minded, focusing on objective and utilitarian issues. Typically they are not anxious, handling life’s challenges in a self-assured manner.

Conventional

Conventional persons tend to be accommodating, conforming, self-reliant and realistic. They are conscientious, self-controlled, perfectionistic, tough-minded, objective and practical.

They are self-disciplined and abide by society’s rules. They focus on utilitarian and practical matters, preferring to adhere to traditional methods and ideas than experimenting with new ideas or experiences.

5.2.2 Kolb’s learning abilities and styles

Kolb’s theoretical descriptions of the personal characteristics associated with the four learning abilities (Concrete Experience, Reflective Observation, Abstract Conceptualization, Active Experimentation) are given in Table 4.2, and those for the four learning styles (Diverger, Assimilator, Converger, Accommodator) are given in Tables 4.3 and 4.4.

Most studies have focused on the relationship between learning abilities or learning

styles and field of study or career choice (see 4.3.1). Few studies have investigated the relationship between learning abilities or styles and personal characteristics. Kolb provided concurrent validity of measurement of his learning abilities and styles by using the Jungian personality dimensions as measured by the Myers-Briggs Type Indicator (MBTI) (Furnham, 1992). Kolb (1984) presented empirical findings to substantiate his theoretical descriptions of learning abilities and styles. He reported unpublished data from three studies conducted in the 1970s by different investigators of three populations (undergraduates, MBAs and educational administration) using the LSI-1976 and MBTI. The data tends to support his hypotheses, but not consistently in all groups. The strongest and most consistent relationships appeared to link CE with feeling, AC with thinking, AE with extrovert and RO with introvert.

In a study by Lewis and Margerison (1979) 220 managers and work experienced MBA students completed the LSI-1976 and the MBTI. It was found that AC was related to the Jungian dimensions of thinking, intuition and judging, whereas CE was related to feeling and sensing. The AE scale was related to the extrovert dimension and RO to the introvert dimension.

West (1982) administered the LSI-1976, the MBTI, the Survey of Interpersonal Values and the Omnibus Personality Inventory to a small sample of first-year medical students. Principal axis factor analysis followed by varimax rotation yielded seven factors: theoretical orientation, social acceptability, benevolence, internal control, extroversion, aestheticism and independence. A median test was used to examine group differences between the seven factors and the Converger/Diverger and Assimilator/Accommodator learning styles. The only significant difference found was that Convergents scored higher on the social adaptability factor than did Divergers, a result that was in the opposite direction than predicted by theory. Furthermore, only five of the 14 comparisons of medians exhibited differences consistent with theoretical predictions. As has been pointed out (see 4.2.3) factor analysis of an ipsative instrument's scores is not advisable.

In a doctoral study by Penn (1992) army nurses completed the LSI-1985 and the MBTI. A significant correlation between the extrovert-introvert dimension of the MBTI and learning styles was found. Accommodators tended to be extrovert and Assimilators tended to be introvert.

Highhouse and Doverspike (1987) administered the LSI-1985, the Group Embedded Figures Test (GEFT) and the Vocational Preference Inventory (VPI) to 111 introductory psychology students. No significant correlations were found between the LSI-1985 and the GEFT. Correlations between the LSI-1985 and the VPI are given in Table 5.1. As can be seen from the table the CE scale was significantly correlated with the Artistic scale. The AE scale was significantly correlated with the Realistic, Social, Conventional and Enterprising scales. The AE scale represents extroversion and the Realistic person is described above (see 5.2.1) as introverted. The RO scale was significantly negatively correlated with the Realistic, Conventional and Enterprising scales. The AC scale did not correlate significantly with any VPI scale.

TABLE 5.1 INTERCORRELATIONS FOR THE LSI-1985 AND VPI AS REPORTED BY HIGHHOUSE AND DOVERSPIKE (1987)

	CE	RO	AC	AE
Realistic	.00	-.21*	.07	.31**
Investigative	-.09	-.00	.12	.09
Artistic	.28**	-.07	-.12	.07
Social	-.12	.08	-.05	.20*
Enterprising	.11	-.27**	-.00	.33**
Conventional	-.06	-.22**	.09	.25**

* $p \leq .05$

** $p \leq .01$

Atkinson, Murrell and Winters (1990) investigated the correspondence between Holland's personality types and Kolb's learning styles. Kolb's LSI-1976 and Holland's SDS-1979 were administered to 169 first-year students aged between 19 and 22 years at a small liberal arts college. There were 76 men and 93 women. The primary Holland personality codes obtained were Social (38.5%), Artistic (16.6%) and

Investigative (24.9%), and 68.6% of the students were either Divergers (40.2%) or Assimilators (28.4%). These findings were consistent with the arts, humanities and basic sciences study directions of the college. The relationship between personality type and learning style is given in the table below:

TABLE 5.2 FREQUENCIES OF HOLLAND PERSONALITY TYPES AND KOLB LEARNING STYLE TYPES AS REPORTED BY ATKINSON *et al.* (1990)

Learning Style	Self-Directed Search: Holland personality type						
	R	I	A	S	E	C	Σ
Diverger	2	10	16	27	7	6	68
Assimilator	2	17	7	17	2	3	48
Converger	1	9	4	5	5	0	24
Accommodator	2	6	1	16	1	3	29
Σ	7	42	28	65	15	12	169

The authors concluded that despite some inconsistencies there were several promising findings. With respect to Kolb's learning styles Divergers had predominantly Social (39.7%) and Artistic (23.5%) codes and 14.7% of the Investigative types were Divergers. Divergers have affective (CE) and reflective (RO) learning preferences and the Social and Artistic types have similar affective preferences, while the Investigative types share the reflective preference.

Assimilators had 35.4% Investigative and 35.4% Social codes. While the abstract (AC) and reflective (RO) learning preferences of the Assimilator are compatible with the Investigative type, the high number of Social types is inconsistent with theoretical expectations.

Convergers had 37.5% Investigative, 20.8% Social and 20.8% Enterprising codes. The abstract (AC) learning preference of the Converger is compatible with the Investigative type and the active (AE) learning preference of the Converger is compatible with the energetic, outgoing nature of the Enterprising, and to a lesser

extent the Social, types.

Accommodators had 55.2% Social and 20.7% Investigative codes. The feelings (CE) and active (AE) learning preferences of the Accommodator are compatible with the Social type, but incompatible with the Investigative type.

From the perspective of the Holland personality types, the Investigative type included 40.5% Assimilators, 23.8% Divergers and 21.4% Convergors. The Investigative type shares a reflective (RO) preference with the Divergers and Assimilators and an abstract (AC) preference with the Assimilators and Convergors.

The Artistic type included 57.1% Divergers and 25% Assimilators. The Artistic type shares a feelings (CE) preference with the Divergers and a reflective (RO) preference with Divergers and Assimilators.

The Social type included 41.5% Divergers, 26,2% Assimilators and 24.6% Accommodators. The Social type shares a feelings (CE) preference with the Divergers and Accommodators, a reflective (RO) preference with the Divergers and Assimilators and an active (AE) preference with the Accommodators.

The Enterprising type included 46.7% Divergers and 33.3% Convergors. The Enterprising type shares a feelings (CE) preference with the Divergers and an active (AE) preference with the Convergors.

There were some inconsistent findings. For example, 50% of Conventional types were Divergers and 35.4% of Assimilators were Social types. The authors suggested that the size and narrowness of the sample may account for these results.

5.3 AN INTEGRATED MODEL OF VOCATIONAL PERSONALITY TYPES, LEARNING ABILITIES AND STYLES

It is proposed that the vocational personality types, learning abilities and styles are related in the following ways.

The Investigative personality type's logical, analytic, reflective and introverted nature

(see Table 3.1a and 5.2.1) has the most in common with the AC and RO learning abilities (see Table 4.2), and thus with the Assimilator learning style (see Table 4.3). The **Investigative** personality type is thus associated with the **Assimilator** quadrant in Figure 5.1. In research by Atkinson *et al.* (1990) (see Table 5.2) the Investigative personality type was associated most frequently with the Assimilator learning style.

The **Artistic** personality type (see Table 3.1a and 5.2.1) characterised by emotionality and creativity has the most in common with the CE learning ability (see Table 4.2). Both introversion and extroversion characteristics have been reported for Artistic types. Introspective, imaginative, daydreaming traits correspond to RO abilities and expressive, assertive and socially bold traits correspond to AE abilities (see Table 4.2), thus linking them with both the **Diverger** and **Accommodator** learning styles as depicted in Figure 5.1. In research by Highhouse and Doverspike (1987) (see Table 5.1) the Artistic type was significantly correlated with the CE scale and in research by Atkinson *et al.* (1990) (see Table 5.2) the Artistic type was associated most frequently with the Diverger learning style.

The **Social** personality type is people-oriented and likes to help others (see Table 3.1b). Karol (1994) noted that this is one of the least distinctive of the personality types in research using the 16 Personality Factor Questionnaire (16PF) as most of the traits fall at or near the mean. Social types have been found to be extroverted and both independent and group-dependent. Characteristics of warmth and empathy are confirmed by low tough-poise scores and high A scores on the 16PF (Karol, 1994). This "feelings" component corresponds to the CE learning ability and the extroversion to the AE learning ability (see Table 4.2). Many elements of the RO learning ability (see Table 4.2) and Diverger learning style (see Table 4.3) correspond to the description of the Social type (see Table 3.1b). The Social type values ethical activities and RO emphasizes a concern with what is true and values impartiality and considered, thoughtful judgement. Divergers are aware of meaning and values, are interested in people and tend to be imaginative and feeling oriented. The **Social** type is thus depicted in Figure 5.1 as being associated with both the **Diverger** and **Accommodator** learning styles. In research by Highhouse and Doverspike (1987) (see Table 5.1) the Social type was significantly correlated with the AE scale and in research by Atkinson *et al.* (1990) (see Table 5.2) the Social type was most frequently associated with the Diverger learning style.

The **Enterprising** personality type is people-oriented, dominant, assertive and extroverted (see Table 3.1b and 5.2.1) thus corresponding strongly with the AE learning ability (see Table 4.2). The Enterprising type also has a stronger objective and utilitarian aspect to their nature, as opposed to the warmth and empathy of the Social type. The people-oriented, extroverted and utilitarian characteristics are seen to correspond most strongly with the **Accommodator** learning style and to some extent with the **Converger** learning style (see Table 4.3). This is indicated in Figure 5.1 by a broken line extending towards the Converger quadrant. In research by Highhouse and Doverspike (1987) (see Table 5.1) the Enterprising type was significantly correlated with the AE learning ability and negatively correlated with the RO learning ability. In research by Atkinson *et al.* (1990) on learning style and personality type (see Table 5.2) there was a low frequency of Enterprising types and a clear pattern did not emerge.

The Conventional personality type is conscientious, perfectionistic, objective and practical. They are data-oriented rather than people-oriented (see Table 3.1b and 5.2.1). Karol (1994) noted that this is the least distinctive type in terms of personality traits in research using the 16PF with most scores falling at or near the mean. The Conventional type's characteristics correspond with aspects of the AE learning ability which emphasize practical applications and a pragmatic concern with what works, as well as aspects of the AC learning ability such as being good at systematic planning and valuing precision, the rigour and discipline of analysing ideas, and the aesthetic quality of a neat conceptual system (see Table 4.2). The **Conventional** type is thus associated with the **Converger** learning style in Figure 5.1. In research by Highhouse and Doverspike (1987) (see Table 5.1) the Conventional type was significantly correlated with the AE learning ability and negatively correlated with the RO learning ability. In research by Atkinson *et al.* (1990) on learning style and personality type (see Table 5.2) there was a low frequency of Conventional types and a clear pattern did not emerge.

The **Realistic** personality type is things-oriented rather than people-oriented. They have practical and unsentimental characteristics and have been described as reserved (see Table 3.1a and 5.2.1). The **Converger** learning style (see Table 4.3) emphasises a practical approach above social and interpersonal involvement and is seen to have the most in common with the Realistic type as depicted in Figure 5.1. In research by

Highhouse and Doverspike (1987) (see Table 5.1) the Realistic type was significantly correlated with the AE learning ability and negatively correlated with the RO ability. In research by Atkinson *et al.* (1990) on learning style and personality type (see Table 5.2) there was a low frequency of Realistic types and a clear pattern did not emerge.

The results of the empirical part of this study are reported in Chapter 7. A discussion of the results pertaining to the proposed integrated model is given in section 7.5.

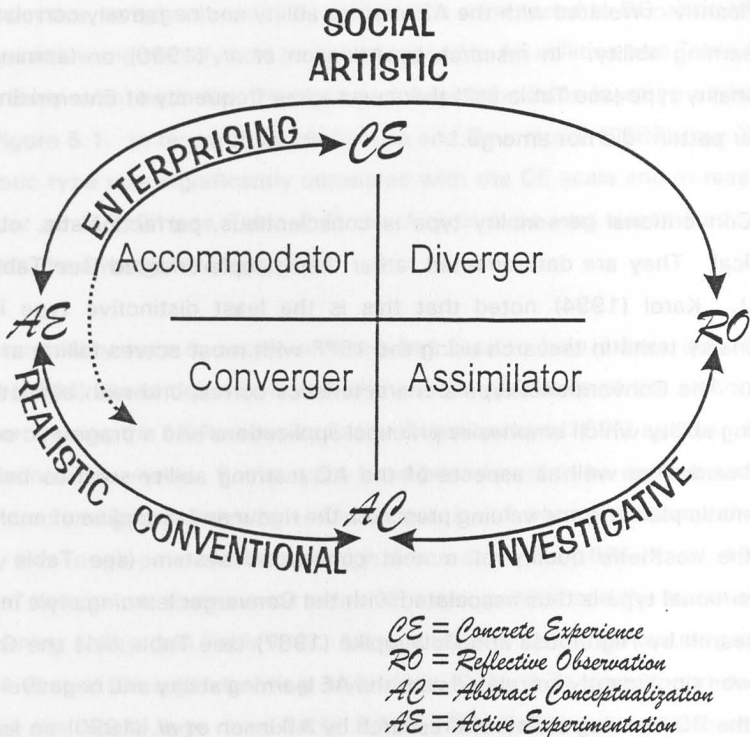


FIGURE 5.1 AN INTEGRATED MODEL OF HOLLAND PERSONALITY TYPES AND KOLB LEARNING ABILITIES AND STYLES

In this chapter an integration of Holland's model of personality types and Kolb's model of learning abilities and learning styles was undertaken. Information on Holland's personality types and Kolb's learning abilities and styles was brought together. Research results in which both Holland and Kolb measurement instruments were used were reported and discussed in terms of the proposed integrated model. A description and visual representation of an integrated model of vocational personality types, learning abilities and styles was then presented.

In the following two chapters the empirical part of this study will be described and the results will be reported. Research results of this study relevant to the integrated model proposed in this chapter will be discussed in Chapter seven.