ENHANCING INTRAPERSONAL INTELLIGENCE FOR STRONG VOCATIONAL IDENTITY

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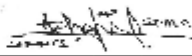of Masters of Science in Innovative Technologies in Education (MS ITE)
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THESIS ACCEPTANCE CERTIFICATE

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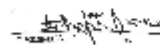
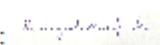Signature (Dean/Principal): _____

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Dedication

I dedicate this effort to my family, particularly my parents who always supported me and pushed me in any way possible to become what I am today. Their sacrifices seeded my success especially my mama and baba who were always there for me despite all the prejudices and stereotypes. I am forever in debt to them.

Certificate of Originality

I hereby declare that this submission titled "Enhancing Intrapersonal Intelligence for Strong Vocational Identity" is my own work. To the best of my knowledge it contains no materials previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any degree or diploma at NUST SEECS or at any other educational institute, except where due acknowledgement has been made in the thesis. Any contribution made to the research by others, with whom I have worked at NUST SEECS or elsewhere, is explicitly acknowledged in the thesis. I also declare that the intellectual content of this thesis is the product of my own work, except for the assistance from others in the project's design and conception or in style, presentation and linguistics, which has been acknowledged. I also verified the originality of contents through plagiarism software.

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Acknowledgments

Glory be to **Allah**, the Creator, the Sustainer of the Universe. Who only has the power to honor whom He please, and to abase whom He please. Verily no one can do anything without His will. From the day, I came to NUST till the day of my departure, He was the only one Who blessed me and opened ways for me and showed me the path of success. There is nothing which can payback for His bounties throughout my time at NUST.

I dedicate my dissertation work to my family, particularly a special feeling of gratitude to my loving parents whose words of encouragement and push for tenacity ring in my ears. My sisters Kulsoom, Warda and brother, Hassaan who have never left my side and are incredibly special. Also, I dedicate this work to my grandparents, who mean so much to me. Although my grandfather is no longer with us, but his memories continue to regulate my life. They have shaped me who I am today and given me the strength and support during my personal and professional life experiences.

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Abstract

The youth of today are encouraged to obtain higher education for the purpose of a successful career life. They are motivated to choose a professional degree that will yield them financial success and dignity. But in doing so, one major aspect is ignored: the interest and strengths/weaknesses of the individual. It is very important for a person to have self-concept. Self-concept can be defined as a person's assessment of themselves, and this includes knowledge about their own interests, likes, dislikes, strengths, weaknesses, and passions etc.

This study illustrates the relationship between self-knowledge and career confusion of an adolescent student in a Pakistani context. The Multiple Intelligences profile of a student is measured using MIDAS survey which is a paid, online software used to measure eight domains of Intelligences as proposed by Gardner. One of these intelligences that is of relevance to this study is Intrapersonal Intelligence, which is related to a person's self-knowledge. The Vocational Identity is measured using MVS scale, which assesses an individual's degree of career confusion.

This research was carried out on grades 9-12 and the age bracket was 14 – 20-year-olds. The educational institutes that the students belonged to includes a government high school, upper middle-class private school, and an elite private university. This is a correlational research study that analyzes the association between two variables. The analysis was done using Pearson's correlation with the significance set at 0.05 in SPSS 21. The results were further supported by regression analysis in a scatterplot.

The findings revealed that students with low Intrapersonal Intelligence were found to have high level of career confusion. Moreover, individuals with a greater Personal Knowledge had more career clarity. Future recommendations of this research include expanding the scope of this study by having mindful interventions based on the MIDAS or any other Multiple Intelligence profile of a student that can help them to develop greater self-knowledge and thus better career clarity. The relationship between these two variables can also be assessed in other geographical locations of the Asian community for reliability.

CHAPTER **1**

Introduction

1.1 Background

Education is an integral part of our life, and it has always seemed to shape our society in direct or indirect way. Education has been institutionalized now and the youth of day is encouraged to pursue higher education to become successful and ensure a vital profession. A high school or college education is no longer considered sufficient to produce a prosperous career. However, even the successful completion of a bachelor's degree does not guarantee success in the profession that follows. It is quite problematic for the youth of today to transition from a college undergraduate to a prosperous professional. There are many reasons that can create this gap between school to career transition.

For this purpose, many initiatives are taken all over the world to ensure a smooth shift from student to professional. So that there are less and less gaps. And students can easily find their own path once they graduate with a specialized degree. But the choice that leads to smooth and fluent transition starts from an early time in a student's life. It's when they make all these little decisions like choosing between Science and Arts in their school or college, similarly, choosing a particular degree while taking admission in university and then having to choose a major. Even after graduation there are multiple occupations that an individual can follow based on the available vocations and their own interest. None of these decisions can be taken suitably unless

the individual is well aware or their own likes, dislikes, interests, strengths and weaknesses. Linking one's own SWOT profile to a career requires a knowledge of self. This is linked to having self-awareness which takes practice and analysis into oneself.

Many colleges and universities offer career counseling strategies or programs aiming to help these students and make life easier for them in this domain. Career indecision and the inability of students to choose an appropriate major for themselves is one of the major causes of a failed career later in their life. Furthermore, such individuals suffer a difficult phase in their life when they have to choose a career for themselves. Many times, the degree they have specialized in doesn't align with their own field of interest.

1.2 Problem statement:

The task of exploring a career can be overwhelming for some young adults because of the sheer number of career options available, not to mention the lack of self-awareness of an individual. There is a dire need for these adolescents to develop career-decision making skills and make developmentally appropriate career decisions. Moreover, an increased awareness of Critical Consciousness may be a support as well as facilitate with school and career related experiences of individuals. Having Critical Consciousness of oneself is linked with positive career development outcomes among adolescents.

Multiple Intelligences (MI) theory is given by Gardner (1989) that states that, "an ability or set of abilities that allows a person to solve a problem or fashion a product that is valued in one or more cultures".

A unique element of Multiple Intelligences theory is Intrapersonal Intelligence, which is often neglected because it is not directly linked with an academic related Intelligence, such as Logical-Mathematical and Linguistic. Intrapersonal intelligence comprises of a complex set of knowledge and abilities pertaining to the individual self. The core idea is that an accurate self-knowledge empowers a person to manage his or her own life accurately.

It is imminent to see if a stronger Vocational Identity is linked with greater Intrapersonal Intelligence. Only when we can find an association between Intrapersonal Intelligence and Vocational Identity of an individual, we will be able to find ways to enhance the self-knowledge, resulting in a stronger and improved Vocational Identity.

1.3 Research questions:

The purpose of this study is to explore if there is an association between Intrapersonal Intelligence and Career Confusion of an individual in Pakistani context, using surveys. This study sought to answer this research question:

Does a correlation exist between Intrapersonal Intelligence and Vocational Identity of an individual in Pakistani context?

1.4 Research hypothesis:

Following hypothesis were proposed to answer the above-mentioned research question.

Hypothesis #1:
H1: There is a significant correlation between Intrapersonal Intelligence and Vocational Identity of an individual in Pakistani context.

Hypothesis #2:
H2: There is a significant correlation between Personal Knowledge and Career Confusion of an individual in Pakistani context.

1.5. Basic assumptions:

The following assumptions can be made for this research:

i. Participants of the research understood the questions in the respective surveys and their

confusions were cleared if any.

ii. Students responded to all the questions in the surveys fairly and to the best of their knowledge and experiences.

iii. There was no influence on the students' responses by their peers, teachers, or any other individual present during the data collection.

iv. The sampling was representative of its population.

1.6.   Organization of dissertation:

This writeup is organized in 6 chapters. Chapter one covers the introduction, problem statement, research question and hypothesis of the study. Chapter two contains the literature study and survey. Chapter three comprises of the research methodology, procedure, design of the study, details of the sample and tools used. Chapter four includes the results and statistical analysis of the study. Chapter five has the summary, conclusion, recommendations for future work, as well as limitations of the research.

Literature Review

2.1 Intelligence:

Most of the definitions of "intelligence" include capacities that are important for success in school and can be measured psychometrically. However, the ability to create a product, write a poem, draw a painting, direct a play, build up and manage an organization, conduct an experiment are not included within the definition of intelligence, supposedly because all the above mentioned capacities cannot be adequately assessed in short-answered tests (Gardner & Hatch, 1989). Based on these incidences, Howard Gardner, a well-known psychologist who spent years in the field of developmental psychology and neuropsychology, and his colleagues examined the literature in several areas, studied the development and breakdown of cognitive capacities, considered the abilities in "special" individuals like autistic and learning-disabled children and prodigies, as well as forms of intellect valued in various cultures and societies and researched the evolution of cognition across the millennia (Gardner & Hatch, 1989). It is claimed that humans, as a species, have evolved over the ages to carry out various forms of intelligences. All humans exhibit these intelligences, some more than the other; based on hereditary and environmental reasons.

Gardner found that his research findings were leading him to the issues regarding human intelligence (Gardner & Hatch, 1989). He was disturbed by the exclusive stress that schools lay upon mainly two forms of intelligence: linguistic and logical-mathematical. Although these two forms of learning and intelligence were no doubt of core importance in a scholastic setting,

other varieties of intelligences were also of eminence in human cognitive activity, both within and outside schools (Gardner & Hatch, 1989). The prominent emphasis on just logical-mathematical and linguistic intelligence and basing all sorts of assessments, achievements tests and intelligence tests on these two variables was disturbingly overwhelming.

2.1.1 Types of Intelligence:

All the above mentioned as well as some other factors led Gardner to a conceptualization of human intelligence that was far more commodious. This was conceptualized by a wide variety of human cognitive abilities, various kind of symbol systems, skills and values appraised in various cultural and historical settings. Gardner proposed a set of relatively independent seven

Multiple Intelligences Definitions and Sample Corresponding Careers

Intelligence	Brief Definition	Sample Corresponding Career
Musical	To think in sounds, rhythms, melodies, and rhymes. To be sensitive to pitch, rhythm, timbre, and tone. To recognize, create, and reproduce music by using an instrument or voice. To engage in active listening and identify connections between music and emotions.	Choir director, Music teacher, Songwriter, Vocalist
Kinesthetic	To think in movements and to use the body in skilled and complicated ways for expressive and goal-directed activities. A sense of timing, coordination for whole body movement, and the use of hands for manipulating objects.	Athlete, Choreographer, Dancer, Actor
Logical-Mathematical	To think of cause-and-effect connections and to understand relationships among actions, objects, or ideas. To calculate, quantify, or consider propositions and perform complex mathematical or logical operations. Involves inductive and deductive reasoning skills and creative problem solving.	Accountant, Computer repair, Electrical engineer, Scientist
Spatial	To think in pictures and to perceive the visual world accurately. To think in 3-D and to transform one's perceptions and re-create aspects of one's visual experience via imagination. To work with objects effectively.	Architect, Pilot, Interior designer, Artist
Linguistic	To think in words and to use language to express and understand complex meanings. Sensitivity to the meaning of words and the order among words, sounds, rhythms, inflections. To reflect on the use of language in everyday life.	Attorney, Journalist, Poet, Public relations director

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Interpersonal	To think about and understand another person. To have empathy and recognize distinctions among people and to appreciate their perspectives with sensitivity to their motives, moods, and intentions. Involves interacting effectively with one or more people in familiar, casual, or working circumstances.	Counselor, Nurse, Salesperson, Teacher
Intrapersonal	To think about and understand one's self. To be aware of one's strengths and weaknesses and to plan effectively to achieve personal goals. Reflecting on and monitoring one's thoughts and feelings and regulating them effectively. The ability to monitor one's self in interpersonal relationships and to act with personal efficacy.	CEO, Clergy, Entrepreneur, Psychologist
Naturalist	To understand the natural world including plants, animals, and scientific studies. To recognize, name, and classify individuals, species, and ecological relationships. To interact effectively with living creatures and discern patterns of life and natural forces.	Biologist, Farmer, Meteorologist, Veterinarian

Figure 1 The Multiple Intelligences Theory depicting the 8 domains of intelligence

intelligences with their own component processes and subtypes in humans (Gardner & Hatch, 1989). Furthermore, there is no specific correlation between any two intelligences, and each is unique in terms of its forms of perception, memory and other psychological processes (Gardner & Hatch, 1989).

2.2. Intrapersonal Intelligence:

Gardner (1993) defines intrapersonal intelligence as "access to one's own feeling life" and to "draw upon them (your feelings) as a means of understanding and guiding one's behavior". Furthermore, he describes the intelligence by stating:

". . . the capacity to understand oneself, to have an effective working model of oneself – including one's own desires, fears, and capacities – and to use such information effectively in regulating one's own life." (Gardner, 1999, p. 43)

Intrapersonal intelligence is defined as the ability to recognize information regarding one's strength and weaknesses (Sari et al., 2018). After introducing the concept of multiple intelligences theory, Gardner revised the concept of intrapersonal intelligence. Although he acknowledged its basic attribution to the emotions of an individual, but moreover he majorly

stressed upon intrapersonal intelligence acting as a guiding light for a person in major life decisions. Not only that but it acts as a "self-regulatory function" for an individual.

2.2.1 Levels of Intrapersonal Intelligence:

Sari et al (2018) conducted a qualitative study to understand the different levels of intrapersonal intelligence in individuals who perform mathematics problems. The results of the study conclude that students with high intrapersonal intelligence values were better able to plan and solve the problems. This is in line with previous research on the same subject matter that those who have high intrapersonal intelligence have high self-esteem, better self-confidence and better judgement of their decisions. Greater self-awareness is linked to less decision-making confusion and commitment anxiety with respect to one's career (Galles et al., 2019). Similarly, high level of mindfulness is also positively associated with fewer negative career thoughts. Moreover, individual with high levels of mindfulness were also found to have higher vocational identity levels (Galles et al., 2019). This suggests that such individuals have a clear picture of their interests, goals and talents.

Students with average intrapersonal intelligence are able to plan, monitor and evaluate appropriately although they lack in figuring out the errors in their process and hence are not able to improve their mistakes (Sari et al., 2018). Similarly, these individuals are aware of their strengths and weaknesses, but they have not yet made the most out of their strengths and minimized their weaknesses.

Finally, students with lowest intrapersonal intelligence of the three categories were confident in their ability to solve the math problems but their lack of precision in performing yielded incorrect answers (Sari et al., 2018). Likewise, individuals with low intrapersonal intelligence are not able to comprehend their limitations while solving a problem. Hence, educators are expected to showcase high levels of intrapersonal intelligence that result in better metacognitive abilities which in turn yield better and effective results.

It is also noteworthy that students who have low intrapersonal scores have flatter or lower MIDAS profiles, compared to those with high intrapersonal scores (Shearer, 2009). What it means is that they don't have even one area of intellectual strength to focus on for studies or career decision making. These students have to be empowered to acknowledge and appreciate their exceptional strengths, irrespective of where they stand in comparison to others. Low intrapersonal scores can also mean ineffective use of metacognitive strategies and this in turn affects academic achievement, which was reflected in the below average Grade Point Average of the participants (Shearer, 2009). The research concludes that career confused students with a risk of dropping out have a set of unique MI abilities that can be acknowledged and used as base to guide these students to choose an appropriate career.

2.2.2. Intrapersonal Intelligence and Career Development:

Three main aspects of intrapersonal intelligence are directly related to career development; first is a realistic acknowledgement of one's MI (Multiple Intelligence) strengths and weaknesses; second is the understanding of how a combination of one's MI strengths can help them be successful in various careers; third is the ability to have better judgement to take decisions in terms of education and succeeding in one's chosen career (Shearer, 2009).

Mean and Standard Deviation Scores on Four MIDAS Scales/Subscales by Level of Students' Career Confusion

MVS Category	Personal Knowledge		Intrapersonal		Written/Reading		School Math	
	M	SD	M	SD	M	SD	M	SD
Very confused (n = 21)	35.52	16.80	41.03	12.22	47.05	23.60	47.61	32.80
Moderately confused (n = 52)	49.63	15.20	46.20	11.78	59.03	19.63	45.03	26.67
Mild–not confused (n = 9)	59.06	16.60	45.01	14.68	50.24	23.46	32.41	25.47
University students (n = 1,347)	61.39	17.30	56.63	12.61	61.94	20.76	56.57	27.60

Figure 2 Results of the study conducted by Shearer (2009)

Brandon Shearer, who is also the researcher behind the MI assessment software MIDAS, conducted a study with university students where he noticed a strong correlation between intrapersonal intelligence and career clarity of an individual. He observed that amongst all the 8 intelligences that are assessed through MIDAS, two of the intelligences; Intrapersonal and Interpersonal were significantly correlated with the MVS score, which measures the career confusion of an individual.

Shearer theorized that a person's intrapersonal intelligence is related to their self-confidence. This hypothesis was observed by comparing the "Personal Knowledge" subscale of MIDAS with their response to the statement "I am confident that I will find a career that suits me" of MVS, which had the strongest negative correlation ($r=-0.39$). This suggests a noteworthy relation between self-knowledge and career self-confidence.

Hence the results of the study conducted by Shearer (2009) suggests empirical support that self-knowledge or intrapersonal intelligence of a person is the most closely related to career planning than any other Multiple Intelligence, including academic intelligences like Logical-mathematical or Linguistic. This deduces that having a strong sense of one's strengths and weaknesses, enables them to be able to choose a college major aligned with their interests and this increases the chance of a successful school-to-career transition for an individual.

2.3. Vocational Identity:

According to Super (1953) people have different and unique abilities, interests and personalities and based on these characteristics, they are qualified for a number of occupations. These occupations require individuals with a specific set of interests, abilities and personality traits. Furthermore, the career cycle or career pattern that an individual goes through starting from their childhood, is widely dependent on the socioeconomical level of one's parents, their mental ability, personality characteristics and the opportunities to which one is exposed.

Super (1957, 1980) claimed that career development occurs throughout the life span of a person

and stressed that the process of career exploration and decision making is fundamental in adolescence. Super (1957) also asserted that career development is closely related to self-concept. Career exploration, planning and decision-making regarding occupation starts from an early age of the student but particularly takes root in high school.

Career development is correlated with the self-esteem of an individual but these patterns have been slightly different for 9th graders and 12th graders (Wallace-Broscious et al., 1994). For those individuals who are further in the process of identity formation, are at a better position to make occupational choices and obtain their goals. This characteristic is observed more in seniors than in freshmen, as the former is more keen towards career transitions and preparing for workplace (Wallace-Broscious et al., 1994). It is also worth noting that in some instances, self-concept varies by grade level and sex. These differences can be explained by various contextual factors, such as school type and expectations, family background and attitudes, peer circle, the society and community expectations and various socioeconomic and cultural forces (Wallace-Broscious et al., 1994).

2.4. Self-awareness/Self-knowledge:

Self-concept can be defined as an individual's view of their own self, which can be either positive or negative (Nasir & Lin, 2012). This view is greatly impacted by their past experiences, their potential future options, their abilities and also what one perceives others think about them or judge them.

Many researchers believe that self-concept has two main categories; general self-concept and academic self-concept (Tirri et al., 2013). A person's self-concept plays a major influence in their self-evaluated intelligence. This self-evaluated intelligence is closely related to a person's self-esteem and self-confidence. In their study, Tirri et al (2013) concentrated on self-evaluated intelligence within the Gardnerian framework. Students reflect both academic as well as general self-concepts in their self-assessments of their strengths and weaknesses. Most importantly, evaluations conducted by oneself are shown to be less threatening than evaluations

conducted by teachers or someone else (Tirri et al., 2013).

In MIDAS assessments, participants are expected to self-evaluate themselves on the spectrum of eight intelligences introduced by Howard Gardener. These self-evaluations are considered a form of assessment that suits self-directed and reflective students (Tirri et al., 2013). Moreover, these assessments are easily to administer in terms of personal or financial resources. In the current scenario of virtual teaching, self-assessments can provide guidance and feedback to the students and teachers respectively.

Mindfulness, when used as a metacognitive tool can also be used to enhance greater self-awareness, and as a result better career decision maker. This includes governing their self-talk, observe and control where they are in the career deciding process, analyzing its consequences, coming up with solution or options, taking a decision and finally employing it.

2.4.1. Interventions to enhance self-knowledge:

Romanowska et al. (2014) conducted a year-long art-based leadership intervention with individuals in managerial positions. At the end of the study, their art-based approach yielded beneficial changes in leaders. Participants of the research showed an enhanced self-awareness which resulted in better performance and leadership qualities along with humility. Self-awareness emerged as a major theme in improved leadership abilities, both in literature and in practice. It provides a solid basis for the decisions and actions taken by leaders (Romanowska et al., 2014).

A study conducted by Mowat (2011) that extended upon 4 years of intervention introduced intrapersonal intelligence among other intelligences with 69 pupils. Students who succeeded in developing intrapersonal intelligence, manifested this in many various ways including reflection upon their behavior and illustrating awareness of it, acquiring better insight of their actions and the motivation behind those actions, improving self-control and self-responsibility. Moreover, these pupils also showed greater interest in improving their behavior and also

considering the consequences of their actions on others. Among other results that Mowat (2011) deduced from this extended study, one of the most important result was that pupils need to be engaged in tasks that are meaningful to them, meaning which not only spark their interest but also are relevant to their current as well as future needs, in terms of career and higher studies. The intervention resulted in outcomes that exceeded not only he pupils' expectations but also their parents (as they were a stakeholder in the study as well).

2.4.2. Self-awareness and Career Development:

A survey conducted by (Nasir & Lin, 2012) with secondary school students in Malaysia established a positive correlation between self-concept and career awareness. The study also verified that the more one gains experience of the working world, the higher level of self-concept that individual has. A person with positive self-concept are able to asses themselves properly, able to react positively with changes in their life, handle their responsibilities well, show emotional intelligence when faced with hardships, able to influence themselves and their surroundings positively, and have the knowledge of their strengths and weaknesses (Nasir & Lin, 2012). In conclusion, the significant correlation between self-concept and career awareness show that they tend to affect one other.

Super (1953) presented "a theory of vocational development", in which he presented a set of ten propositions. The very last and most significant of these propositions state that "The process of vocational development is essentially that of developing and implementing a self-concept."

2.4.3. Critical Consciousness and Career Development:

Diemer and Blustein (2006) conducted an experiment with 220 urban adolescents in order to study the role of critical consciousness in predicting career development. Their studies found out that participants who had greater level of critical consciousness had more clarity regarding their vocational choices compared to those with lower levels of critical consciousness. They

also concluded that these individuals were more dedicated to their potential careers and invested in the effort to choose the best career path for themselves. The findings of their research can help career counselors and psychosocial activists to foster critical consciousness among adolescents. This can empower the participants to take informed decisions regarding their vocational futures. Critical consciousness helps an individual to transcend their situation through action and reflection. Advancing in career development which ideally leads to occupational attainment and economic progress shows the solidifying of this transcendence (Diemer & Blustein, 2006).

A study conducted by Fisher (2007) explored the relationship between dialogue and cognition abilities in young children. It concludes that dialogic enquiry techniques which boost critical consciousness, provide effective methods for teaching. These techniques help to develop metacognitive capacities in children.

2.5 Career counseling in Pakistan:

The youth of today are highly encouraged to obtain higher studies so that they can have an established career ahead of them, as only high school studies are deemed insufficient in the fast paced world of today (Shearer, 2009). Having said that, transitioning into a career successfully and satisfyingly is problematic for many young adults (Shearer, 2009).

There is a serious attention needed in the educational institutes of Pakistan with respect to career counseling (Bilal, 2014). Most people choose their profession without understanding their personal goals or interests in life. A few of them that are guided are the ones who got guidance from their parents and in some cases, their teachers. All in all, it is done informally and without following proper protocol.

A qualitative study conducted by Bilal (2014) with 25 participants belonging from various educational and demographic backgrounds indicate that none of the participants received any formal career counseling in their academic life. There are offices at some universities for career

counseling but these do not serve the purpose as they only act as a placement office to get their students employed into various jobs (Bilal, 2014). The absence of career counseling in the lives of students make them choose such professions which only appear attractive or interesting, and in some cases noble professions like lawyers or doctors. Students also tend to opt those careers that is chosen by their siblings or parents, without keeping in reference their own abilities and interests.

Methodology

This chapter explains the data collection process including the details about participants, methodologies used and the tools that were utilized. The details of the tools and research design, as well as the proposed data analysis are also discussed. This study was focused on finding correlation between the Intrapersonal intelligence and Career Confusion of the participants.

3.1 Proposed methodology:

This flowchart (Figure 3) represents the research methodology used in the study.
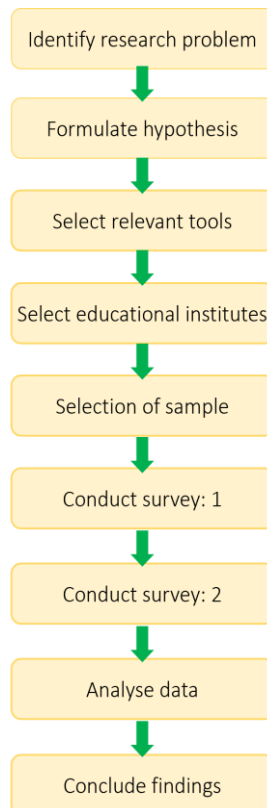
Figure 3 Flowchart of the study

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3.2 Participants:

There was a total of 74 participants, with 43 female participants and 31 male participants. Out of the 74 participants, 42 of the students were freshly graduated from their higher secondary education and currently enrolled in National University of Computer and Emerging Sciences (NUCES) which is an esteemed private university, while 13 were enrolled in grade 9 in Working Folks Grammar School which is a semi-government school and 19 of the participants were enrolled in grade 10 in Peshawar Model Girls High School which is a private school. All these educational institutes are in Peshawar, Pakistan.

The nationalities of the participants include Pathan, Punjabi and Balochi, but most of them were Pathan; however, the exact figures were not obtained. Approximately 18% of the participants belong to low socio-economic background, while the rest of 82% belong to middle and upper middle-class socio-economic background.

The higher secondary school students were in a coeducation setting, while the grade 9 and 10 was an all-girls school. The number of boys to girls is shown in figure 4.
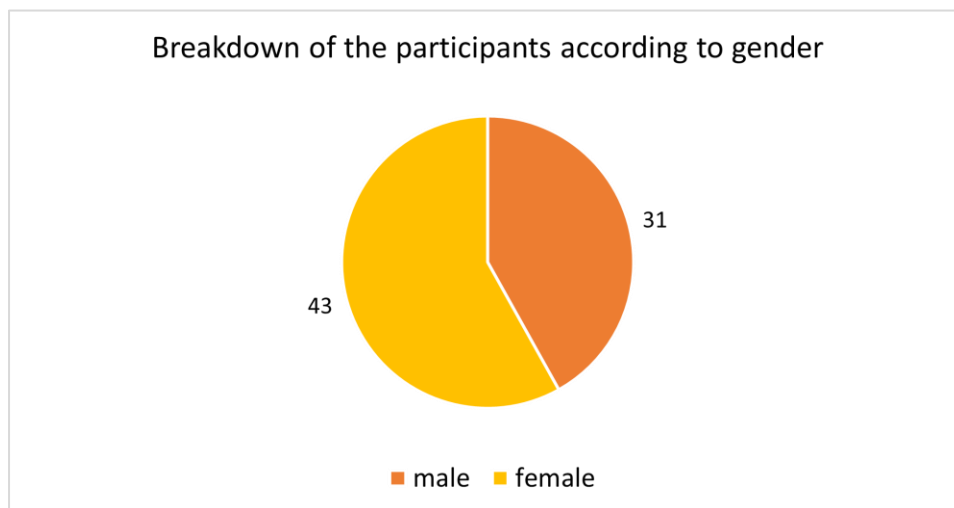
Figure 4 Breakdown of the participants according to their gender

The grades selected for this study were 9 to 12 grades, as the career clarity or decision making is highlighted during this stage. Figure 5 shows the grade-wise percentage of participants.
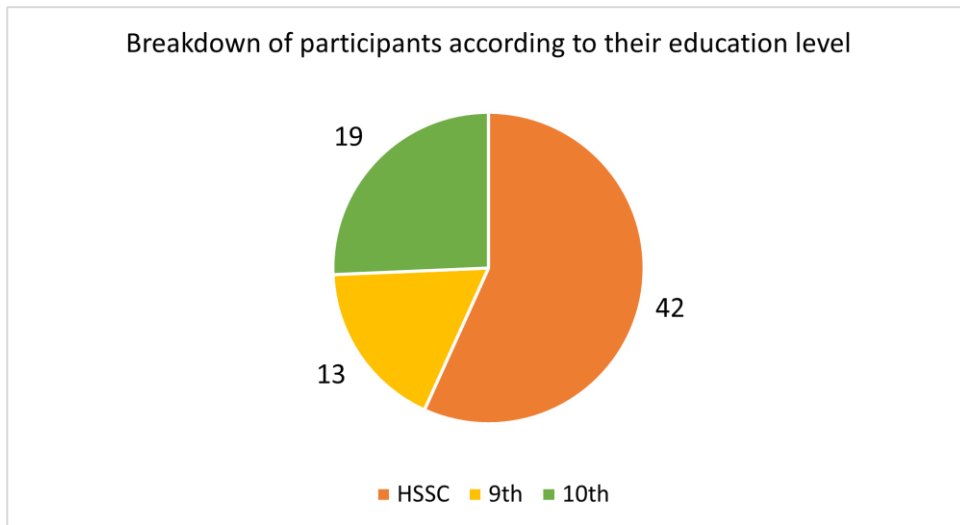
Figure 5 Breakdown of the participants according to their education level

The participants were adolescents aged 14-20. 4 students were 14-year-old, 20 were 15-year-old, 7 were 16-year-old, 6 were 17-year-old, 16 were 18 year old, 13 were 19 year old, and 8 students were 20 year old. Figure 6 shows the percentage of age groups that participated in this study.
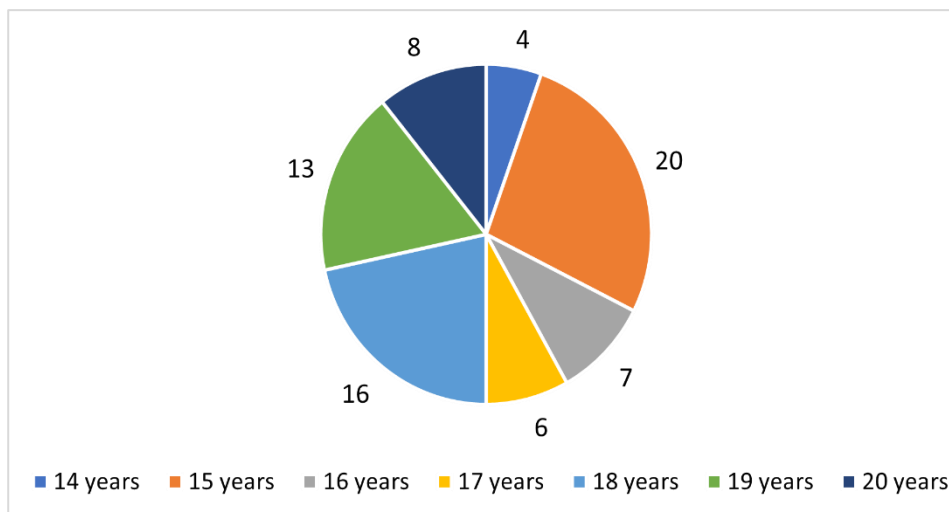
Figure 6 Breakdown of the participants according to their age

To ensure a diverse sample size, such steps were taken. The diverse socioeconomic backgrounds as well as a disparate range of age groups were chosen for this purpose. A diverse sample size indicates a well spread-out data and a vertical approach. Previous research (Shearer, 2009) has concluded results in a horizontal approach by having the sample size from just a single large, midwestern university.

3.3 Research questions:

- Does a correlation exist between intrapersonal intelligence and vocational identity of an individual in Pakistani context?

3.4 Research hypothesis:

The following null hypotheses were designed for this study:

3.4.1. Hypothesis 1:

H_0: No correlation exists between Intrapersonal Intelligence and Vocational Identity of an individual in Pakistani context.

And the alternative hypothesis is:
H_1: A significant correlation exists between Intrapersonal Intelligence and Vocational Identity of an individual in Pakistani context.

3.4.2. Hypothesis 2:

H_0: No correlation exists between Personal Knowledge and Career Confusion of an individual in Pakistani context.

And the alternative hypothesis is:

H₁: A significant correlation exists between Personal Knowledge and Career Confusion of an individual in Pakistani context.

3.5 Research design:

Since the purpose of this project is to assess the career confusion of adolescents and establishing its relationship with their intrapersonal intelligence, the *correlational research methodology* is chosen for this purpose.

The study is focused on establishing a relationship between intrapersonal intelligence and vocational identity in a Pakistani context. Hence, a correlational type of research design is suitable for this research. This is a non-experimental type of research method in which two variables are measured and their statistical relationship is assessed with no influence from any extraneous variable.

There are 3 possible outcomes of a correlational study: positive correlation, negative correlation and zero correlation.

- A positive correlation implies that both the variables are going in the same direction, i.e., if one increases, the other one also increases and vice versa.
- A negative correlation implies that an increase in one variable is associated with a decrease in the other variable, i.e., if one increases, the other one decreases and vice versa.
- A zero correlation means that there is no connection between the two variables.

3.5.1 Variables:

Correlational research is used to measure the strength of association between variables. These variables are not manipulated or influenced by the researcher like in experimental research

study. Correlational research has a high external validity which means that the results of this type of study can be confidently generalized to other situations or settings.

Correlational study does not establish causation, meaning one variable causing the other. This infers that there is no independent or dependent variable in correlational research design. A correlational study only shows if there is a relationship between variables.

In this study, the relation is established between intrapersonal intelligence and vocational identity. Furthermore, a subscale of intrapersonal intelligence is *personal knowledge* whose relationship is also determined with vocational identity.

3.6 Instruments:

There were two main tools used to measure the intended variables from the sample population.

3.6.1 Multiple Intelligences Developmental Assessment Scales (MIDAS; Shearer, 2009)

The MIDAS provides a rich and detailed profile of an individual's multiple intelligences. It is a research-based self-report questionnaire for people of all ages. It contains 119 questions that cover over 8 intelligence areas including linguistic, logical-mathematical, spatial, musical, kinesthetic, naturalist, interpersonal and intrapersonal (Shearer & Luzzo, 2009).

There are further 26 subscales within these 8 main areas of intelligence, each specifying a skill domain. For example, the Intrapersonal main scale contains 4 further subscales: Personal Knowledge, Calculations, Spatial Problems Solving, and Effectiveness.

There is a score generated for each main scale and subscale after the conduction of the survey. The manual of MIDAS provides regulations for interpreting the scores depicted in table 1.

Score	Interpretation
80-100	very high
60-79	high
40-59	moderate
20-39	low
0-19	very low

Table 1 Guidelines for interpreting MIDAS scores

3.6.2. My Vocational Situation (MVS; Holland et al., 1980)

This self-report scale is designed to evaluate struggles related to vocational decision making. It is commonly used in career planning to identify if an individual has unclear goals, career confusion or require additional help in deciding on a career for themselves.

It consists of 18 questions that are rated "true" or "false" by the user. It assesses the thoughts, feelings and thinking related to one's career planning. It measures the extent to which a person has a clear view of their career goals, ambitions, and plans (Holland et al., 1980).

The number of responses marked "false" are added to obtain the Vocational Identity score. High score means stronger vocational identity and less career confusion. While low score means more career confusion of the individual.

3.7. Research constraints:

The MVS scale is conducted on paper, while MIDAS survey is supposed to be conducted online. The 42 freshly graduated HSSC students completed their MIDAS survey online.

However, the 32 school students were not able to do this online due to internet and computer unavailability. For these students, there is an alternative that is offered by the support staff at MIDAS. They were made to perform the survey on paper and later each of those surveys were filled online by the researcher.

Results and Analysis

4.1. Introduction

Relevant data was collected after the surveys. The collected data was then tabulated to conduct tests on it. This chapter discusses the results of the study as well as the analysis of the data collected.

To find out the statistical significance and relationship between the two primary variables, the data was analyzed using IBM SPSS 21 (Statistical Package for the Social Sciences) statistical software. Statistical significance helps to see if a result of a study has occurred randomly, or a dependent variable has influenced the results.

The purpose of this study is to find out the relationship between Intrapersonal Intelligence and Career Confusion of adolescents, more specifically those who are at an early career planning stage of their life. Moreover, the study also compares the Personal Knowledge, which is a subcategory of the Intrapersonal Intelligence assessed through MIDAS, with their Career Confusion.

The sample of students is taken from diverse backgrounds, including private and public educational institutes, a disparate age group, various grade levels and different socio-economic backgrounds. This was done to ensure the diversity of the data.

4.2. Procedure:

At the start, students were given a brief understanding of both the types of surveys and what it assesses. For those students who were unable to grasp the meaning of some questions, one-on-one support was provided. The students first completed the MIDAS survey which took them around 45-60 minutes on average. Afterwards, they were given the MVS survey which took them 10-15 minutes to complete.

For those students who completed the MIDAS survey online, they were provided with an ID and password which was unique to each user. As MIDAS is a paid software, it requires an exclusive login credential for each user. After submitting the survey, each user is provided with a detailed MIDAS profile on the registered email address. For those students who did not have any internet or digital resource to conduct the MIDAS test online, were given printed form of the MIDAS test. These responses were then submitted online by logging into each ID.

4.3. Scores of the surveys:

There are total of 8 intelligences that MIDAS assesses but we only analyzed an association of Career Confusion with one of these intelligences which is Intrapersonal Intelligence and its subscale Personal Knowledge. As this type of intelligence best demonstrates that self-knowledge of an individual.

Career Confusion is assessed through My Vocational Situation (MVS), while Intrapersonal Intelligence is evaluated through Multiple Intelligences Developmental Assessment Scales (MIDAS).

4.3.1. My Vocational Situation (MVS)

The MVS score is from 0 to 18. The lower the score, the greater the career confusion of the

participant and vice versa. The scores are generally divided into three subcategories: very confused (score 1-4), moderately confused (score 5-9), mild to no confusion (score 10-18).

The mean score on the MVS scale is 9.25 with a standard deviation of 3.45 for all the students who participated in this study indicating that the group as a whole is moderately confused. On these mentioned guidelines, 7 students were classified as very confused, with a mean score of 3.7, 34 students were categorized as moderately confused with a mean score of 7.3, and 33 students were considered as mild to not confused with a man score of 12.4.

MVS	Participants	Average
All	74	9.25
Very confused (1-4)	7	3.71
Moderately confused (5-9)	34	7.32
Mild to not confused (10-18)	33	12.42

Table 2 Average scores measured by the MVS

4.3.2. Multiple Intelligences Developmental Assessment Scales (MIDAS)

We have to establish a correlation between Career Confusion and Intrapersonal Intelligence of an individual, which is one of the eight intelligences that is assessed by MIDAS profile. There are four subcategories within Intrapersonal Intelligence: Personal Knowledge, Calculations, Spatial Problem-solving and Effectiveness. The MIDAS profile provides with a separate score of each of these individual categories as well as an accumulative score of Intrapersonal Intelligence. Out of these four categories, Personal Knowledge is the most relevant to our scope of study. In this regard, we chose Personal knowledge as the sub-category which is the most relevant to self-awareness of an individual (Shearer, 2009).

We assume that the greater an individual has self-awareness or knowledge about self, the lesser

the career confusion. When we translate this in terms of scores of MIDAS and MVS, we say that the greater the MVS score, the lesser the career confusion. And the greater the score on any MIDAS scale of intelligence, the greater the intelligence of that domain.

4.4. Pearson correlation:

Pearson correlation is a type of statistical test that is conducted on a dataset when there has to establish a correlation between two or more variables. The association can be positive or negative. This test measures the strength of a linear relation between two variables, and it is denoted by the Pearson correlation coefficient, r.

This coefficient can take up a value ranging from +1 to -1. A value of 0 indicates that there is no association between the two variables. A value greater than 0 signifies a positive correlation; meaning if the value of variable increases, the value of the other variable also increases. A value lesser than 0 specifies a negative correlation; that is, if value of one variable increases, the value of the other variable decreases.

The stronger the correlation between the variables, the closer the value of r to either +1 or -1, depending on if it's a positive correlation or negative correlation, respectively.
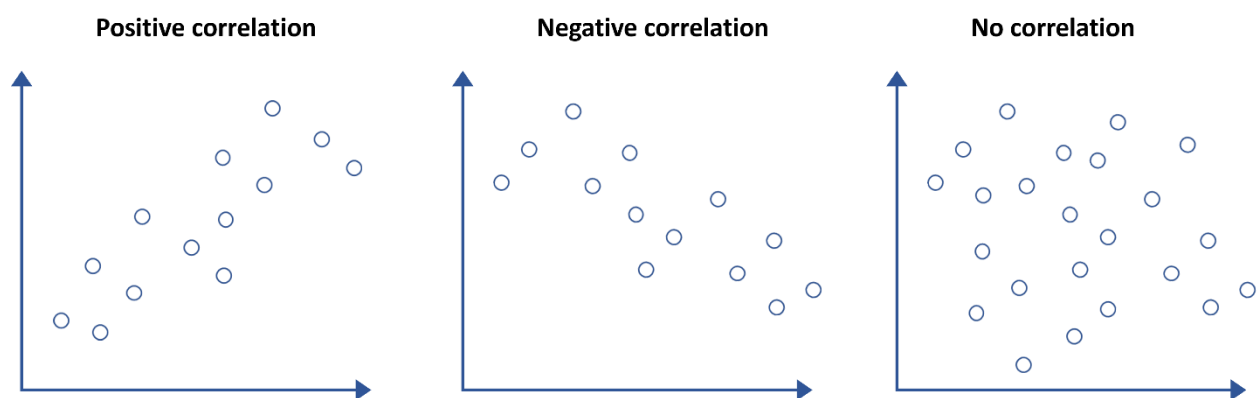
Figure 7 Types of correlation depicted by scatterplot

27

4.5. Results:

Intrapersonal knowledge was found to be moderately correlated with the MVS score. The *r* value is 0.39 for Intrapersonal knowledge. Moreover, the correlation between MVS and Personal knowledge is even greater with an *r* value of 0.48.

Correlations

		MVS	Intrapersonal	PersonalKnowledge
MVS	Pearson Correlation	1	.392**	.485**
	Sig. (2-tailed)		.001	.000
	N	74	74	74
Intrapersonal	Pearson Correlation	.392**	1	.806**
	Sig. (2-tailed)	.001		.000
	N	74	74	74
PersonalKnowledge	Pearson Correlation	.485**	.806**	1
	Sig. (2-tailed)	.000	.000	
	N	74	74	74

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 Pearson correlation test between MVS and Intrapersonal Intelligence and Personal Knowledge

This signifies that there is a moderately strong correlation between the participant's self-awareness and their career clarity. On the scatterplot, we see an upward regression line indicating that there is a positive correlation of MVS score with Intrapersonal Intelligence as well as with Personal Knowledge.
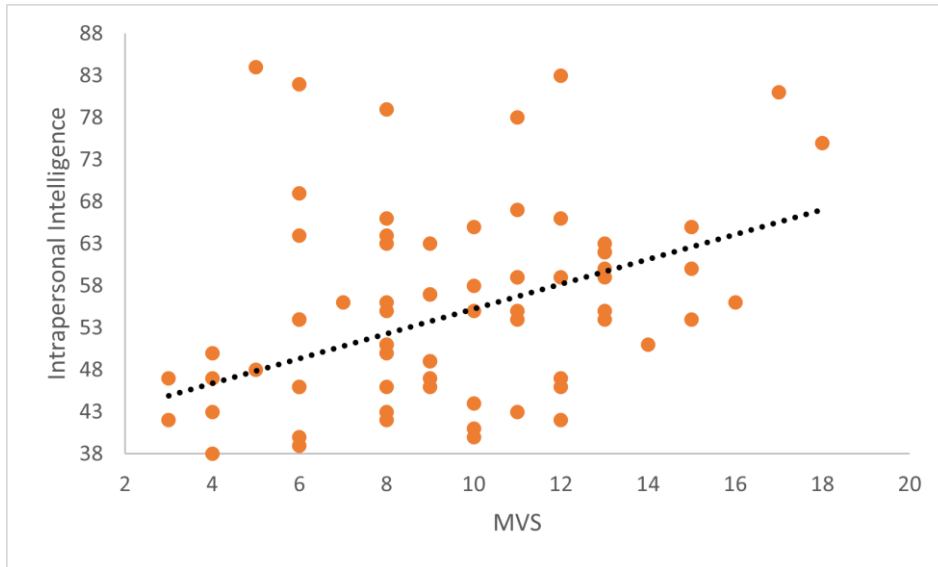
Figure 8 Scatterplot with regression line between MVS and Intrapersonal Intelligence
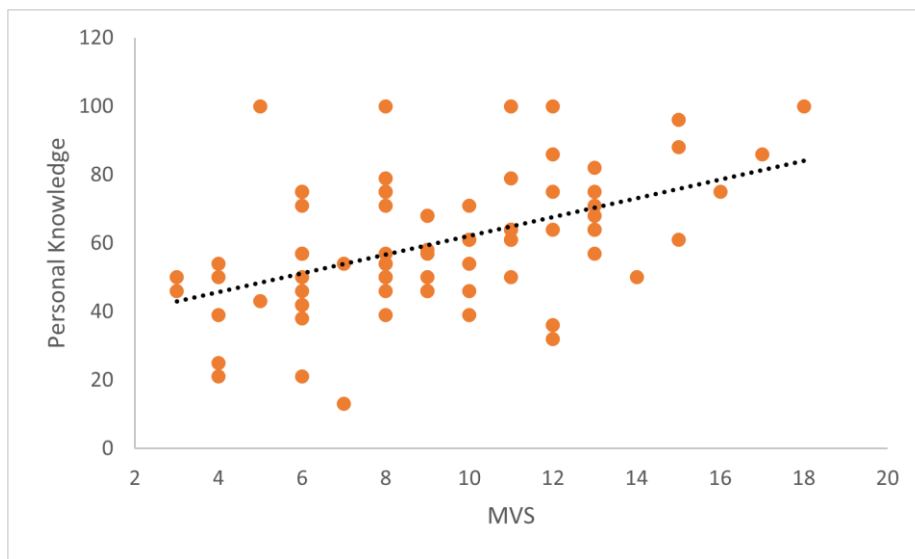
Figure 9 Scatterplot with regression line between MVS and Personal Knowledge

This association is further supported by the significant differences in Intrapersonal Intelligence and Personal Knowledge mean scores found among the three levels of career confusion. An individual scoring of 40% and below is considered as having low self-knowledge, 40%-60% is considered moderate self-knowledge, while above 60% is interpreted in the high range.

MVS Category	Intrapersonal Intelligence		Personal Knowledge	
	M	*SD*	*M*	*SD*
Very confused (n=7)	41.71	8.36	40.71	13.00
Moderately confused (n=34)	52.82	13.92	56.67	18.56
Mild-not confused (n=33)	58.12	10.95	67.90	17.95

Table 4 Mean and standard deviation scores by level of students' Career Confusion

In the Intrapersonal Intelligence category, the very confused group is 11 points lower than moderately confused group (41% vs. 52%) and the moderately confused group is 6 points lower than the mild-not confused group (52% vs. 58%).

Whereas in the Personal Knowledge subcategory, the very confused group is 16 points lower than the moderately confused group (40% vs. 56%) and the moderately confused group is 11 points lower than the mild-not confused group (56% vs. 67%).

4.6. Discussion:

Our research question "Does a correlation exist between intrapersonal intelligence and vocational identity of an individual in Pakistani context?" was established into two hypotheses.

4.6.1. Null hypothesis: 1

The first null hypothesis "No correlation exists between Intrapersonal Intelligence and Vocational Identity of an individual in Pakistani context" was analysed by using the Pearson

correlation to find an association between the two variables. The results of the relation showed that both Intrapersonal Intelligence and Vocational Identity score are associated moderately strongly with a correlation coefficient, r, set at 0.392. The result established that an increase in knowledge of self or Intrapersonal Intelligence results in less career confusion, or in other words, greater career clarity. Further regression analysis provides support to this statement as the regression line in the scatterplot shows a positive upward inclination as shown in Figure 8.

4.6.2. Null hypothesis: 2

The second null hypothesis "No correlation exists between Personal Knowledge and career confusion of an individual in Pakistani context" was also analysed using Pearson correlation to find the relationship between the personal knowledge, which is a subcategory of the Intrapersonal Intelligence on the MIDAS survey, and career confusion which is measured using the MVS scale. The results show that a strong association exists between the two variables as the value of r is set to be 0.485. This association also is evident through the scatterplot and regression analysis which demonstrate an upward regression line, shown by Figure 9.

The research results of this study show empirical data for the theory that a correlation does exist between Intrapersonal Intelligence and Vocational Identity of an individual in Pakistani context. The data shows that a positive association exists between Intrapersonal Intelligence, out of the 8 intelligences that MIDAS assesses, and career confusion. For someone having increased level of Intrapersonal Intelligence has also increased career clarity or less career confusion.

The metacognitive process of distinguishing one's strengths, weaknesses as well as academic interests and relating an academic major according to that, is the responsibility of a quality institute. It is important to note that merely identifying one's strengths, weaknesses, limitations, and interests does not help to choose a major or academic degree. One has to creatively relate their own profile with the practical and available careers out there.

Shearer (2009) concluded from his studies that in university students self-knowledge is closely related to career planning than any of the other Multiple Intelligences, including those that are related to academic success like Linguistic and Logical-Mathematical. MIDAS profiles can help an individual to raise awareness of their own strengths and interests by interpreting the scores of the various Multiple Intelligences and their subcategories. Moreover, there is a significant relationship between self-concept and career awareness amongst secondary school students as well in southeast Asia (Nasir & Lin, 2012).

Efforts to develop self-awareness can result in a more mindful and emotionally intelligent individual. Students with high self-knowledge have the ability to assess themselves more critically and deal with their shortcomings in a positive way, they also have the ability to handle responsibilities and are willing to take calculated risks. These individuals also have the ability to find out the available vocations and relate it to their purpose and motivation that can result in a fulfilled and successful professional and personal life.

CHAPTER 5

Conclusion

5.1. Conclusion:

Previous research have associated the clarity of career planning and decision making with Intrapersonal Intelligence in university students of US (Shearer, 2009). In an Asian setting, there was no correlation studied through research between these two variables. Although there have been many career counseling strategies and academic assisting practices to guide transition into an appropriate occupation. Mostly in Asian households the focus is on choosing a medical or engineering profession, as these career paths are considered noble and respectful professions in such societies. Generally in the Subcontinent, there is no specific practice of career counseling available to students (Bilal, 2014). Those programs that do offer these services merely link the students to the available university or degree options based on their academic achievements rather than taking their strengths, weaknesses, and likes, dislikes in consideration (Bilal, 2014).

In this regard, a correlational research study took place to associate the self-knowledge with Vocational Identity of an individual. The sample size was 74 students. In order to ensure diverse research, the sample size was taken from a range of various educational institutes, grades and socioeconomic backgrounds as well as a fair number of both males and females. Participants of the study belonged to government, middle-class private and top private institutions. The age group was 14 - 20-year-old and the grades were 9, 10 and first semester university students.

Quantitative analysis showed a significant association of $r = 0.39$ between Vocational Identity and Intrapersonal Intelligence and a greater positive association of $r = 0.485$ between Personal Knowledge and career confusion. Personal Knowledge is a sub-category of Intrapersonal Intelligence which represents an in-detailed account of self-awareness. Furthermore, a mean score difference of 11 points between very confused and moderately confused group and difference of 6 points between moderately confused and mild/not confused group was also observed. These statistics provide empirical evidence for the hypothesis presented by this research.

The results of this study offer support for these insinuations.

- There is a moderately significant relationship observed between Intrapersonal Intelligence and Vocational Identity of an individual.

- There is a meaningful association observed between career confusion and Personal Knowledge of the student.

- The better an individual know themselves, the better decisions they can take of their life, including those of vocation and career.

Additionally, the MIDAS profile presents a detail account of an individual based on their responses which they can use as a framework to build upon their personality by amplifying their strong suits and working around their weaknesses. It is without a doubt that the greater knowledge one has of themselves, the better they are able to respond on a survey like MIDAS, where they have to answer questions regarding their own intellect, interests, strengths and weaknesses as well likes and dislikes (Shearer, 2009).

5.2. Future work:

Career counseling and awareness of self is a domain that can use a lot of attention from the right pool of people. Many individuals suffer greatly because of lack of guidance from

professionals (Bilal, 2014). There is also a stigma attached with exploring unconventional career paths, particularly in the Asian sub-continent. The culture around career guidance has to modify and accepted so that students can take it without a shame.

We hope that this research can act as a base and provide with the necessary motivation to career counseling programs and centers so that they direct their attention to a person's intrapersonal and affective profile rather than only highlighting the academic report. This practice has to be incorporated since a younger grade to guarantee a successful and guided practice for a student throughout their life. Given the importance of this field, it is a very important and viable research area that should be given its due importance.

5.3. Limitations:

The current findings are limited because of the relatively small sample size of the study. It is recommended that:

- It be replicated with a larger sample of participants and a more diverse sample, like targeting low socioeconomic background individuals as well as ranging over different cities of Pakistan or Asian subcontinent.

- This data does not clarify if students enrolled in other educational institutes in metropolitan cities of Pakistan versus in rural areas produce the same statistics or they vary in some way. Comparison studies between rural and urban areas can also be noteworthy area of research.

- The scope of this research included intervention with the students to enhance their Intrapersonal Intelligence through guided programs and then conducting a quasi-experimental study to see if the pre and post intervention results have significant differences. But that was not possible due to the COVID-19 SOPs and lockdown, and it ultimately reduced the time allotted for this study to be completed. In future, that can also be looked into a possible area of research.

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APPENDICES

Appendix A: MIDAS Survey

FULL NAME:

GENDER(M/F):   **AGE:**

INSTRUCTIONS

Please read carefully!

MIDAS-Teen

These questions will take about 30 minutes to answer. There are 8 areas of activities, skills and interests covered. Think of this as if you are interviewing yourself. You may be surprised by what you know about yourself when you think carefully.

For questions that give you several choices, pick the one activity you're strongest in and rate yourself on that only.

>   **It is important that you give *honest* responses.**

>   **Be fair to yourself.**

>   **Do not under rate what you are able to do.**

You do not have to answer or guess at every question because each one has an "**I don't know or Does not apply**" choice. Use this answer whenever it fits best for you. For example, some of the questions may ask about things you may not remember, or you never got to do.

Your profile will only be as accurate as your answers.

It's O.K. to respond that you do not know

TEEN: MUSICAL

1. **As a child, did you have a strong liking for music or music classes?**

A little   Sometimes   Usually

Often   All the time   I don't Know

2. **Did you ever learn to play an instrument?**

No   A little   Fair

Good   Excellent   I don't know

3. **Can you sing 'in tune'?**

A little bit   Fair   Well

Very well   Excellent   I don't know

4. **Do you have a good voice for singing with other people in harmony?**

A little bit   Fair   Good

Very good   Excellent   I don't know

5. **Did you ever play an instrument, play with a band or sing with a group?**

Never   Every once in a while   Sometimes

Often   Almost all of the time   I don't know. Does not apply.

6. **Do you spend a lot of time listening to music?**

Every once in a while   Sometimes   Often

Almost all the time   All the time   I don't know

7. **Do you ever make up songs or write music?**

Never   Once or twice   Every once in a while
Sometimes   Often   I don't know

8. **Do you ever drum your fingers, whistle or sing to yourself?**

Every once in a while   Sometimes   Often
Almost All the time   All the time   I don't know

9. **Do you often have favorite tunes on your mind?**

Every once in a while   Sometimes   Often
Almost all the time   All the time   I don't know

10. **Do you often like to talk about music?**

Never   Every once in a while   Sometimes
Often   Nearly all the time   I don't know

11. **Do you have a good sense of rhythm?**

Fair   Pretty good   Good
Very good   Excellent   I don't know

12. **Do you have a strong liking for the SOUND of certain instruments or musical groups?**

Every once in a while   Sometimes   Often
Almost all the time   All the time   I don't know

13. **Do you think you have a lot of musical talent or skill that hasn't been brought out?**

    No   Some   A fair amount

A good amount   A great deal   I don't know

14. **Do you often have music on while you work, study or relax?**

Every once in a while   Sometimes   Usually

Almost always   Always   I don't know

TEEN: KINESTHETIC

15. **In school, did you generally enjoy sports or gym class more than other school classes?**

Not At All   A little   About the same

Enjoy sports more   Enjoy sports much more   I don't know

16. **How often do you play sports or other physical activities?**

Every once in a while   Sometimes   Often

Almost always   All the time   I don't know or does not apply

17. **Have you ever performed in a school play or taken lessons in acting or dancing?**

Never   Maybe once   A couple of times
Often   Almost all the time   I don't know

18. **Do you or other people (like a coach) think that you are coordinated, graceful or a good athlete?**

No   Maybe a little   About average
Better than average   Superior   I don't know

19. **Did you ever take lessons or have someone teach you a sport such as bowling, karate, golf, etc.?**

No   Rarely   Sometimes

Often   Nearly all the time   I don't know

20. **Have you ever joined teams to play a sport?**

Never   Rarely   Sometimes

 Often   Almost all the time   I don't know

21. **Do you often do physical work or exercise?**

Rarely   Sometimes   Often

Almost all the time   All the time   I don't know. Does not apply

22. **Are you good with your hands at things like card shuffling, magic tricks or juggling?**

Not very good   Fair   Good

Very good   Excellent   I don't know

23. **Are you good at doing precise work with your hands such as sewing, making models, tying flies, typing or have good handwriting?**

Not at all   Fairly good   Good

Very good   Excellent   I don't know

24. **Do you enjoy working with your hands on projects such as mechanics, building things, preparing fancy food or sculpture?**

Never or rarely   Sometimes   Often

Almost all the time   All the time   I don't know. No opportunity

25. **Are you good at using your body or face to imitate people such as teachers, friends, or family?**

Not at all   A little bit   Fair

Good   Very good   I don't know

26. **Are you a good dancer, cheerleader or gymnast?**

Not at all   Fairly good   Good

Very good   Excellent   I don't know

27. **Do you learn better by having something explained to you or by doing it yourself?**

Always better by explanation   Sometimes better by explanation   No difference

Usually better by doing it   Always better by doing it   I don't know

TEEN: LOGIC / MATH

28. **As a child, did you easily learn math such as addition, multiplication and fractions?**

Not at all   It was fairly hard   Pretty easy

Very easy   Learned much quicker than all the kids   I don't know

29. **Have you ever had extra interest or skill in math?**

Very little or none   Maybe a little   Some

More than average   A lot   I don't know

30. **How have you done in advanced math classes such as algebra or calculus?**

Didn't take any   Not very well   Fair (C's)

Well (B's)   Excellent (A's)   I don't know

31. Have you ever had interest in studying science or solving scientific problems?

No   A little   Average

More than average   A great deal   I don't know

32. Are you good at playing chess or checkers?

No   Fairly good   Good

Very good   Excellent   I don't know

33. Are you good at playing cards or solving strategy or puzzle-type games?

Not at all   A little   About average

Better than average   Excellent   I don't know

34. Do you often play games such as Scrabble or crossword puzzles?

Very rarely or never   Every once in a while   Sometimes

Often   All the time   don't know. No opportunity

35. Do you have a good system for managing your money or figuring a budget?

Not at all   Fairly good   Good

Very good   An excellent system   I don't know or does not apply

36. Do you have a good memory for numbers such as telephone numbers or addresses?

Not very good   Fair   Good

Very good   Superior   I don't know

37. How are you at figuring numbers in your head?

Can not do it   Not very good   Fair

Good   Excellent   I don't know

38. **Are you a curious person who likes to figure out WHY or HOW things work?**

Every once in a while   Sometimes   Often

Almost all the time   All the time   I don't know

39. **Are you good at inventing 'systems' for solving long or complicated problems? For example, organizing a room or big projects?**

Not very good   Fair   Good

Better than average   Excellent   I don't know

40. **Are you curious about nature like fish, animals, plants or the stars and planets?**

Rarely   Sometimes   Often

Almost all the time   All the time   I don't know

41. **Have you ever liked to collect things and learn all there is to know about a certain subject such as horses, baseball, etc.?**

Not at all   A little   Sometimes

Often   Almost all the time   I don't know

42. **Are you good at jobs or projects where you have to use math a lot or get things organized?**

Not good at all   Fairly good   Good

Very good   Excellent   I don't know.

43. **Outside of school, have you ever enjoyed working with numbers like figuring baseball averages, gas mileage, budgets, etc.?**

Not at all   Every once in a while   Sometimes

Often   Almost all the time   I don't know

44. **Do you use good common sense for planning social activities, making home repairs, or solving mechanical problems?**

Sometimes   Usually   Often

Almost all the time   All the time   I don't know

TEEN: SPATIAL

45. **As a child, did you often build things out of blocks or boxes, play with jacks, marbles or jump rope?**

Never or rarely   Sometimes   Often

Almost all the time   All the time   I don't know

46. **How well can you do any of these: mechanical drawing, hair styling, woodworking, art projects, auto body, or mechanics?**

Didn't take any   Fair   Good. (C's)

Very good. (B's)   Excellent. (A's)   I don't know

47. **How well can you 'design' things such as arranging or decorating rooms, craft projects, building furniture or machines?**

Never do   Fair   Pretty good

Good   Excellent   I don't know

48. **Can you parallel park a car on your first try?**

Rarely or do not drive   Sometimes   Often

Almost all the time   All the time   I don't know. No opportunity

49. Are you good at finding your way around new buildings or city streets?

Not at all   Fairly good   Good

Very good   Excellent   I don't know

50. Are you good at using a road map to find your way around?

Not at all   Fairly good   Good

Very good   Excellent at map reading   I don't know

51. Are you good at fixing 'things' like cars, lamps, furniture, or machines?

Not at all   Not very good   Fair

Good   Excellent   I don't know

52. How easily can you put things together like toys, puzzles, or electronic equipment?

Not at all   It is hard   It is fairly easy

It is easy   It is very easy   I don't know

53. Have you ever made your own plans or patterns for projects such as sewing, carpentry, crochet, woodworking, etc.?

Never   Maybe once   Every once in a while

Sometimes   Often   I don't know

54. Have you ever drawn or painted pictures?

Rarely or never   Every once in a while   sometimes

Often   Almost all the time   I don't know. No opportunity

55. Do you have a good sense of design for decorating, landscaping or working with flowers?

Not very good   Fair   Good

Very good   Excellent   I don't know

56. Do you have a good sense of direction when in a strange place?

Not at all   Fairly good   Good

Very good   Superior   I don't know

57. Are you good at playing pool, darts, riflery, archery, bowling, etc.?

Not at all   A little   Fair

Better than average   Excellent   I don't know

58. Do you often draw a picture or sketch to give directions or explain an idea?

Never   Rarely   Sometimes

Often   All the time   I don't know

59. Are you creative and like to invent or experiment with unique designs, clothes or projects?

Very little or not at all   A little   Somewhat

Often   Almost all the time   I don't know

TEEN: LINGUISTIC

60. Do You enjoy telling stories or talking about favorite movies or books?

Not at all   Rarely   Sometimes

Often   Almost all the time   I'm not sure

61. Do you ever play with the sounds of words like making up jingles, or rhymes? For example, do you give things or people funny sounding nicknames?

Never   Rarely   Sometimes

 Often   All the time   I don't know

62. Do you use colorful words or phrases when talking?

No   Rarely   Sometimes

Often   All the time   I don't know

63. Have you ever written a story, poetry or words to songs?

Never   Maybe once or twice   Occasionally

Often   Almost all the time   I don't know

64. Are you a convincing speaker?

Not at all   Every once in a while   Sometimes

 Often   Almost all the time   I don't know

65. How are you at bargaining or making a deal with people?

Not very good   Fair   Pretty good

 Good   Excellent   I don't know

66. Can you talk people into doing things your way when you want to?

Not at all   Every once in a while   Sometimes

Often   Almost all the time   I'm not sure

67. Do you ever do public speaking or give talks to groups?

Very rarely or never   Every once in a while   Sometimes

Often   Almost all the time   I don't know.

68. How are you at managing or supervising people?

Never do or not good at all   Fair   Good

Very good   Excellent   I don't know.

69. **Do you have interest for talking about things like the news, family matters, religion or sports, etc.?**

A little   Some interest   Average interest

More than average   A great deal   I don't know

70. **When others disagree are you able to easily say what you think or feel?**

No   Every once in a while   Sometimes

Often   All the time   I don't know

71. **Do you enjoy looking up words in dictionaries, or arguing with others about "the right word" to use?**

Never or rarely   Every once in a while   Sometimes

Often   Very often   I don't know

72. **Are you often the one asked to "do the talking" by family or friends because you are good at it?**

Very rarely or never   Rarely   Sometimes

Often   Almost all the time   I don't know

73. **Have you ever been good at imitating the way other people talk?**

Not really   Fairly good   Pretty good

Good   Very good   I don't know

74. **Have you ever been good at writing reports for school or work?**

Not really. Never do any.   Pretty good   Good

Very good   Superior   I don't know

75. Can you write a good letter?

No or fair   Pretty good   Good

Very good   Excellent   I don't know

76. Do you like to read or do well in English classes?

A little   Sometimes   Usually

Often   All the time   I don't know

77. Do you write notes or make lists as reminders of things to do?

Rarely or never   Every once in a while   Sometimes

Often   Almost all the time   I don't know

78. Do you have a large vocabulary?

Not really   Less than average   About average

Above average   Superior   Don't know

79. Do you have skill for choosing the right words and speaking clearly?

Not at all or rarely   Sometimes   Usually

Most of the time   Almost always   Don't know

TEEN: INTERPERSONAL

80. Have you had friendships that have lasted for a long time?

One or two   More than a couple   Quite a few

A lot   A great many long lasting friendships   I don't know

81. **Are you good at making peace at home, at work or among friends?**

Fair   Pretty good   Good

Very good   Excellent   I don't know

82. **Are you ever a 'leader' for doing things at school, among friends or at work?**

No   Every once in a while   Sometimes

 Often   Almost always   I don't know

83. **In school, are you usually part of a particular group or crowd?**

No   Every once in a while   Sometimes

Most of the time   Almost all the time   Don't know

84. **Do you easily understand the feelings, wishes or needs of other people?**

Sometimes   Usually   Often

Almost always   Always   I don't know

85. **Do you ever offer to 'help' other people such as the sick, the elderly or friends?**

Sometimes   Usually   Often

Very often   Always   I don't know

86. **Do friends or family ever come to you to talk over personal troubles or to ask for advice?**

Every once in a while   Sometimes   Often

Almost All the time   All the time   I don't know

87. **Are you a good judge of 'character'?**

Every once in a while   Sometimes   Usually

Almost always   Always   I don't know

88. **Do you usually know how to make people feel comfortable and at ease?**

Every once in a while   Sometimes   Usually

Almost always   Always   I don't know

89. **Do you generally take the good advice of friends?**

Every once in a while   Sometimes   Usually

Often   Almost always   I don't know

90. **Are you generally at ease around (boys or girls) your own age?**

Rarely   Sometimes   Usually

Almost all the time   Always   I don't know

91. **Are you good at understanding your (girlfriend's or boyfriend's) ideas and feelings?**

Every once in a while   Sometimes   Usually

Almost all the time   All the time   I don't know. Does not apply.

92. **Are you an easy person for people to get to know?**

Not at all   Pretty hard   Fairly easy

Easy   Very easy   I don't know

93. **Do you have a hard time coping with children?**

Usually have a hard time.   Sometimes it is hard   Usually easy

Almost always easy   Always very easy   I don't know

94. **Have you ever had interest in teaching, coaching or counseling?**

Very little or none   A little interest   Some interest

A lot of interest   A great deal of interest   I don't know or doesn't apply

95. **Could you do well when working with the public in jobs like sales, receptionist, promoter, police, or waiter?**

Fair   Fairly well   Well
Very well   Excellent   I don't know. Does not apply.

96. **Do you prefer working alone or with a group of people?**

Always alone   Usually alone   No preference
Usually with a group   Always with a group   I don't know

97. **Are you able to come up with unique or imaginative ways to solve problems between people or settle arguments?**

Maybe once or twice   Every once in a while   Sometimes
Often   All the time   I don't know

TEEN: INTRAPERSONAL

98. **Do you have a clear sense of who you are and what you want out of life?**

Very little   A little   Usually
Most of the time   Almost all of the time   Don't know

99. **Are you aware of your feelings and able to control your moods?**

Every once in a while   Sometimes   Most of the time
Almost all of the time   Always   I don't know

100. **Do you plan and work hard toward personal goals like at school, at work or at home?**

Rarely   Sometimes   Usually
Almost all the time   All the time   I don't know

101. **Do you 'know your own mind' and do well at making important personal decisions such as choosing classes or changing jobs?**

No or every once in a while   Sometimes   Usually
Almost all the time   All the time   I don't know

102. **Are you happy with the work you choose because it matches your skills, interests and personality?**

No or rarely   Sometimes   Usually
Almost all the time   All the time   I don't know or does not apply yet

103. **Do you generally know what you are good at (or not good at) doing and try to improve your skills?**

Every once in a while   Sometimes   Usually
Almost all the time   All the time   I don't know

104. **Do you get very angry when you fail or are frustrated?**

Almost all the time   Sometimes   Every once in a while
Almost never   Never   I don't know

105. **Have you ever had interest in 'self improvement'? For instance, do you attend classes to learn new skills or read 'self-help' books or magazines?**

No   A little   Sometimes
Often   Almost always   I don't know

106.   **Have you ever been able to find unique or unusual ways to solve personal problems or achieve your goals?**

Once or twice   Every once in a while   Sometimes
Often   All the time   I don't know

TEEN: NATURALISTIC

107.   **Have you ever raised pets or other animals?**

Never or Rarely   Every once in a while   Sometimes
Often   All the time   No chance

108.   **Is it easy for you to understand and care for an animal?**

Not at all   Maybe a little   Fairly easy
Quite easy   Very easy   I don't know

109.   **Have you ever done any pet training, hunting or studied wildlife?**

No   A little   Sometimes
Quite a bit   A great deal   I don't know. No opportunity.

110.   **Are you good at working with farm animals or thought about being a veterinarian or naturalist?**

Not at all   A little   Some
Quite a bit   Very much so   I don't know

111.   **Do you easily understand differences between animals such as personalities, traits or habits?**

Not at all   A little   Fairly easy

Quite easy   Very easy   I don't know

112.   **Are you good at recognizing breeds of pets or kinds of animals?**

Not at all   A little   Somewhat

Quite good   Very good   I don't know

113.   **Are you good at observing and learning about nature, for example, types of clouds, weather patterns, animal or plant life?**

Never   A little   Some

Quite a bit   A great deal   I don't know

114.   **Are you good at growing plants or raising a garden?**

Not at all   A little   Somewhat

Quite a bit   Very good   I don't know.

115.   **Can you identify or understand the differences between types of plants?**

Not at all   A little   Somewhat

Most of the time, yes   All the time   Don't know

116.   **Are you fascinated by natural energy systems such as chemistry, electricity, engines, physics or geology?**

No   A little   Somewhat

Quite a bit   A great deal   I don't know

117.   **Do you have a concern for nature and do things like recycling, camping, hiking or bird watching?**

No   A little   Some

A lot   A great deal   I don't know

118.   **Have you taken photographs of nature or written stories or done artwork?**

No   A little   Some

A lot   A great deal   I don't know

119.   **Is spending time with nature an important part of your life?**

Not really   A little   Somewhat

Quite a bit   Very much so   I don't know

Appendix B: MVS Survey
My Vocational Situation

Name _____ Date _____ M___F ____ Age ____

Education completed_____ Other _____

List all the occupations you are considering right now.

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

Try to answer each of the following statements as mostly TRUE or mostly FALSE. Circle the answer that best represents your present opinion.

In thinking about your present job or in planning for an occupation or career:

1.	I need reassurance that I have made the right choice of occupation.	T	F
2.	I am concerned that my present interests may change over the years.	T	F
3.	I am uncertain about the occupations I could perform well.	T	F
4.	I don't know what my major strengths and weaknesses are.	T	F
5.	The jobs I *can do* may not pay enough to live the kind of life I want.	T	F
6.	If I had to make an occupational choice right now, I'm afraid I would make a bad choice.	T	F
7.	I need to find out what kind of career I should follow.	T	F
8.	Making up my mind about a career has been a long and difficult problem for me.	T	F
9.	I am confused about the whole problem of deciding on a career.	T	F
10.	I am not sure that my present occupational choice or job is right for me.	T	F
11.	I don't know enough about what workers do in various occupations.	T	F
12.	No single occupation appeals strongly to me.	T	F
13.	I am uncertain about which occupation I would enjoy.	T	F
14.	I would like to increase the number of occupations I could consider.	T	F
15.	My estimates of my abilities and talents vary a lot from year to year.	T	F
16.	I am not sure of myself in many areas of life.	T	F
17.	I have known what occupation I want to follow for less than one year.	T	F
18.	I can't understand how some people can be so set about what they want to do.	T	F

(over) ~

For questions 19 and 20, circle YES or NO.

19. I need the following information:

How to find a job in my chosen career.   Y   N

What kinds of people enter different occupations.   Y   N

More information about employment opportunities.   Y   N

How to get the necessary training in my chosen career.   Y   N

~

Other: _____

_____

20. I have the following difficulties:

I am uncertain about my ability to finish the necessary education   Y   N
or training.

I don't have the money to follow the career I want most.   Y   N

I lack the special talents to follow my first choice.   Y   N

An influential person in my life does not approve of my   Y   N
vocational choice.

~

Anything else? _____

_____

_____

Other comments or questions: _____

_____

_____

_____

_____

Developed by John L. Holland, Denise C. Daiger, and Paul G. Power.

This form is available at the University of Maryland, Department of Counseling and Personnel Services Web site:
http://www.education.umd.edu/EDCP/staff_details.cfm?bio_id=205250124040820082