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**Spiritual Dimensions in Vocational Training of  
Information and Communication Technology  
Professionals**

**Summary of Doctoral dissertation  
in the field of Management Sciences**

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## Abstract

The main aim of the research was to explore the occurrence of spirituality, treated as biological phenomenon by David Hay, in vocational training of Information and Communication Technology (ICT) and the linkages between spirituality and mentioned training.

The study had two research problems:

- What kind of spiritual dimensions (if any) could exist in vocational training of ICT professionals?
- What could be the linkage between spirituality and vocational training of ICT professionals?

Hay's model of spirituality, which was used in the study, contains awareness sensing, mystery sensing, and value sensing. For the current research, the author has chosen narrative and rhetoric epistemology as an example of constructive paradigm. The research approach was qualitative exploratory, both narration and rhetoric analysis looking for patterns of spiritual dimensions and meta- dimensions, which were based on Hay's model, in vocational training treated as long-life phenomenon. The data was collected through in-depth interviews with eight experts, ICT professionals from Pakistan.

The author has recorded more than 20 hours of narrations (which were conducted around 20 weeks), which cover 136 standardized transcription pages and 2710 sentences (50989 words). The sentence was a basic unit of analysis in this research. The following methods for analyzing the data was used by exploiting content analysis: manual narrative and rhetoric analysis, taxonomy analysis (Wroclaw taxonomy) and Nvivo qualitative research software.

Most of the experts have expressed their experiences of spirituality both in their personal and professional side of life. According to the results of the study, awareness sensing, mystery sensing, and value sense found in the personal and professional life of ICT experts and appeared in such patterns as enlightenment and sense-making. The results of the study highlight the rhetorical nature of spirituality in vocational training of ICT professionals as cognitive and emotional phenomenon with the inherent axiological component. It is recommended that ICT organizations should invest in ICT professionals by introducing some professional training programs to facilitate spirituality in the ICT environment. Moreover, the awareness to spirituality can also be introduced during the professional education of ICT professionals through organizing conferences, workshops and interactive sessions. The study also provides ICT's organizations about the rhetorical nature of spirituality that will be helpful in designing the curriculum of vocational training. Development of spirituality needs not only rational discussion about values but it also involves emotions. Therefore, the practical workshops should be designed in such a way, which involves both rational thinking and emotional element. Some practical exercises can also be undertaken which carry out rational discussion about the role of emotions in reference to values.

**Keywords:** Vocational training, information technology, spirituality, David Hay's spiritual conception, qualitative analysis, rhetorical analysis

## **1 Introduction and Background of the Study**

According to some scholars, previous two eras have seen noticeable changes in research patterns of organizational studies around the globe. This paradigmatic shift has entirely changed the scenario from the economic structure of societies to the social life of individuals (Baker, Bloom, & Davis, 2012; Dempsey, 2013; Mitchell & Ward, 2010); not only this, Tran and Dempsey (2017) presented the upscaling need of knowledge, skills and abilities requisite to meet the needs of various fields of life. The underpinning factors of this dynamic shift are turning from agriculture and steps ahead to industrialization and moving forward towards institutionalization of knowledge and information.

Jaremczuk and Mazurkiewicz (2014), and Guthrie, Perkins, and Mitchell (2005) stated the most significant associated factor is the swift advancement in technology responsible for the quick changes in social and economic lifestyle and work patterns include modification in communication configurations, trade arrays, and social as well as development patterns can be seen globally. Despite the current situation, unemployment is an alarming scale, and the core reason is existing education system which is not capable of educating and training people to meet the contemporary needs and social expectations (Dempsey, 2013). Organizations are now experiencing wide-ranging and enduring variations that taking place within the active surroundings in which it functions. In reaction, modern societies are much elastic, placing more emphasis on worker empowerment and cooperative employee relations. Because of a changing environment, employees are feeling harassed, nervous, insecure, disheartened, unfulfilled and terrible, with a want to be spiritually satisfied (Jaremczuk and Mazurkiewicz, 2014). It seems a requisite to inspire individuals to find a sense or a meaning of their lives. In order to achieve a meaning or a sense in personal as well the work life, the overview of spirituality into a workplace may help as a foundation to create this sense.

Lee, Maclean, and Joy (2018) suggested that the lifetime learning; a commendable strategy to cope with the challenges of contemporary societies, is highly associated with the Vocational Education and Training (VET) sector; this not only improved the training quality which is essential and stimulating task for VET institute but also fulfilled the growing demand for skilled and technical workers (Guthrie, 2010; and Wheelahan, 2011). In order to acquire a well understanding of actin knowledge atmosphere, the performance of apprentices must be considered from psychological, physical as well from the spiritual dimensions perspectives. Hartsfield (2003), Hay and Nye (2006), Walt (2007), Kvarfordt and Herba (2018) reported that the past studies and literature had measured the physical and psychological dimensions very comprehensively, the measurement of spirituality has not been explored so far in depth.

Furness (2012) and Furman, Benson, Grimwood, and Canda (2004) claimed about the British social workers and social work students that they did not explore the spiritual dimension; therefore, room for research and dire rationality is available to discover the dimensions of spirituality and opportunity in association by means of vocational training. Literature evidenced that Abdelzaher, Abdelzaher and Walker (2017); Fernandes, Quelhas, Ferraz, and Bezerra (2018); Garg (2018); Jafari (2016); Kalantari and Khalili (2018); and Walker (2018) threw light on spirituality and its significance in diverse study areas like; counselor education, psychology, marriage, family therapy and supervision.

Young, Cashwell, and Shcherbakova (2000) considered spirituality as the core among two-thirds of Americans and is a steadfast as well as significant factor in setting lifestyle, a pattern of living inclusive of their workplace attitude, behavior and conduct of masses. A positive

trend can be seen in association with organizational work attitudes (Milliman, Czaplewski, & Ferguson, 2003), transformational leadership (Hartsfield, 2003) and organizational performance (Neck & Milliman, 1994) with individual and workplace spirituality, an individual's spiritual wellbeing and concluded that spirituality significantly affects the psychological welfare of human being. The same inspiring conviction and notion of classical theories are inspirational for researchers.

Victor Frankl was the originator of "Existential Analysis Logotherapy" presented the meaning of life's spiritual dimension (Frankl, 1959); moreover, Walt (2007) claimed that Maslow (1954) theory of hierarchy of needs, self-esteem and actualization are associated with Herzberg (1966) persuaders and Alderfer's (1972) theories of growth and needs, so these all are providing strengthful association with spirituality.

VET is fundamental in economic and social policy framework and design worldwide (Dempsey, 2013). VET has given considerable importance while developing the 2020 development strategy in Europe (Deaconu & Mocanu, 2016). Cedefop (2011) in the report of "The European Centre of the Development for Vocational Training" mentioned essentiality and implications of VET in European countries whereas Hoffman and Schwartz (2015) reported that VET is core in training the highly skilled labor force in Switzerland and a strong connection between the Swiss education system and VET. Aside from Europe, Dempsey (2013) evidenced that VET is strongly associated with job performance in UK and Australia whereas, in developing countries, Tilak (2003) and Raza & Khalid (2017) have highlighted that Asian economies have given particular attention to VET.

VET gained popularity among Asian countries in their formal or informal education system (Mustafa, Abbas, & Saeed, 2005), notwithstanding; it is imperative to individuals, employers, government and political influencers. In Australia, VET is responsible for upscaling the skills of workers whereas, the Peoples Republic of China considers it significant, and the government is responsible for developments in quality assurance framework, accountable for its systematic working where public and private VET suppliers will work (Hillier, 2012). Becker (1962) presented Human Capital theory focusing on the role of individual's training and education on organizational productivity and its connection with labor market structure, and its institution is in line with VET (Schultz, 1961; Mincer, 1974; Becker, 1975; Nilsson, 2010).

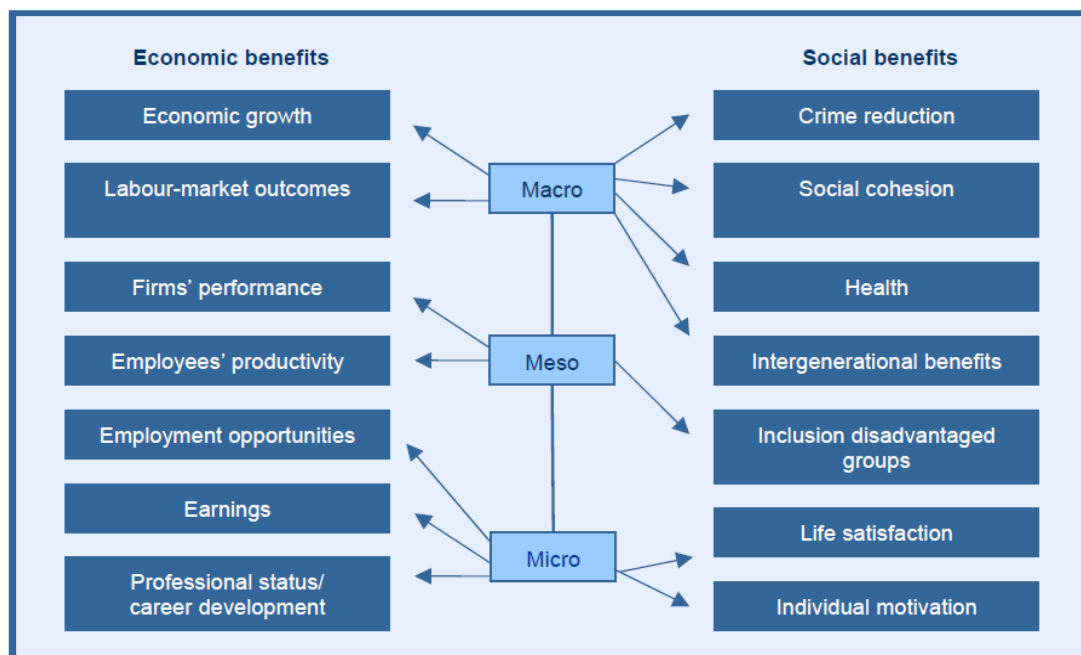
Keeping in view the importance of vocational training in economic and social development of the societies, this is dire need of time to explore VET in diverse perspectives; like spiritual dimension is strongly connected with the social context of VET. The researcher aims to explore what sort of spiritual dimension exists in vocational training, the linkage between spirituality and VET and how spirituality enriches the vocational training.

## **1.1 Vocational Training, and Information and Communication Technology (ICT)**

Human Resource Development (HRD) constitutes a series of processes to enhance human efficiency through personnel training and develops the already trained resource to upscale performance and advocates training as significant activity (Swanson, 1995). Training can be done by diversified methods, and vocational training is one of them. Descy, Tchibozo, and Tessaring (2009) defined VET, "Vocational education and training (VET) contain more or less organized activities, which may or may not lead towards a well-known qualification. The qualification purpose is to deliver people with the valuable information or knowledge, skills, and

capabilities that are required as well considered sufficient to perform a job. The VET content could be a job-specific, directed towards a broader range of jobs or occupations, or may be a mixture of both.” Multiple VET institutions offer a variety of training schemes which comprises of the diversified modules of traditional cultural trade, modern technical training, professional studies, employment courses and pieces of training. According to Dempsey (2013), VET is positioned in social and economic policy all over the world and Fleckenstein (2016) considered VET as a sensible strategy for policy making, improvement of job prospects and social inclusion of youngsters. a few of the benefits associated with VET are highlighted in Figure 1 below.

**Figure 1: Significance of VET**



Source: European Centre for the Development of Vocational Training (Cedefop, 2011)

Dempsey (2013) stated that VET constitutes a wide array of training programs and varied subjects and Information and Communication Technology (ICT) is one of them. ICT can be defined in different ways depends on subjectivity and individual knowledge (Duy, 2013). Barba-Sánchez, Martínez-Ruiz, and Jiménez-Zarco (2007) defined ICT, “a collective term for a wide range of software, hardware, telecommunications, and information management techniques, applications and devices, and are used to create, produce, analysis, process, package, distribute, receive, retrieve, store and transform information within and outside to organization”.

ICT has a broad and extensive scope. Other than computer and internet, it entails other technologies (Modimogale and Kroeze, 2011). Griffin, Care, and McGaw (2012) stated that since the last decade ICT gained popularity and significant attention due to its role in the attainment of skills core to compete in the 21st century. The government, educationists, private firms and employers have recognized the need of modern learning in order to personalize student learning and letting them skillfully using ICT to cater with high and competitive needs or demands of the 21<sup>st</sup> century (Keane, Keane, & Blicblau, 2016).

Shapiro, Lauritzen, and Irving (2011) mentioned in their research report that a joint study conducted by European Union (EU) and United States (US) on emergent skills and competencies inferred that ICT is one of the core developments of 21<sup>st</sup>-century education and lifelong learning skills. Wong (2007) recognized ICT as a critical driver to growth and productivity in developing

countries since last two decades and it allows information access and searches easy and available to all (Siddiq, Scherer, & Tondeur, 2016); hence playing a pivotal role in academia and industry.

In view of economic and social benefits of VET, it is the dire need of time to explore VET in diverse perspectives; like spiritual dimension is strongly connected with the social context of VET and researcher aims to explore the linkage between spirituality and VET and how spirituality enriches the vocational training.

## **1.2 The Question of Spirituality in Business**

The spirituality in business is contemporary and evolved its meaning over the last fifteen years. Rolheiser (1998) noticed in the west, spirituality is associated with religion, interpreted and expressed in a religious context and devotion to Christianity. However, the growing secularism in western society changes the meaning and context of spirituality (Andrew, 2016). Fuller (2001) highlighted that spirituality can now include secular elements where many individuals seek to articulate a spiritual and moral view of life not necessarily dependent on or relating to religious beliefs. Therefore, ambiguity lies about the meaning and components of spirituality and a confused word in English language (Rolheiser, 1998).

Crawford and Rossiter (2006) defined spirituality as a pathway where individuals identify and relate the moral and spiritual dimensions with life and can include the transcendent. Rossiter (2011) claimed that generally, individuals understanding regarding spirituality as a built-in genetic capacity in all individuals and this spiritual potential defines the human species characteristic (Hay, 2006; Tacey 2000; Schneiders 2003; Leak, Hu and King 2008). Rossiter (2010) highlighted the implied values regarding values in individuals thinking and behavior rooted from the common grounds in essential human spirituality.

Weber (1930) described that labor is not only the economic factor but possesses spirituality, which can be seen in the production. Bomba (2006) claimed spiritual harmony is the key driver towards good management a hundred years back and confirmed the assertions of Karol Adamiecki (1866-1933) who pioneered and developed scientific management concepts in Eastern Europe (Wesolowski, 1978) and highlighted the critical perspectives of spiritual harmony in management (Adamiecki, 1925). Bomba (2006) confirmed the assertions of Karol Adamiecki (1866-1933) who claimed spiritual harmony as the key driver towards good management (Adamiecki, 1925). Furthermore, (Wesolowski, 1978) mentioned that Karol Adamiecki pioneered and developed scientific management concepts in Eastern Europe. Goodarzi and Kaviani (2013) highlighted that spirituality in organizations is the hot plate and grab the attention of not only managerial tiers and staff but also underpinning management theorists.

The increasing attention towards spirituality and its blended combination with business indicates the broader social concerns (Bell & Taylor 2001). Organizations are seeking a high-level commitment from their employees, which can be realized while full concerns, and caring for the employee. The fast-paced global economy turns towards restructuring, competition, diversity friendliness, re-engineering, downsizing, ageing populations and pollution which forced strategic managers and business executives to rethink and shuffle the policies and resynchronize the business strategies and reorganize their economic and intellectual resources as per 21<sup>st</sup>-century business acumen (Walt, 2007)

Recent studies of Fernandes et al. (2018), Abdelzaher et al. (2017); Garg (2018); Kalantari and Khalili (2018); Ke et al. (2017); Kvarfordt and Herba (2018); Moran (2017);

Walker (2018) and Oxhandler et al. (2017) highlighted the importance of spirituality and its integration with individual and organizational perspectives of motivation, job performance, commitment, engagement and satisfaction. Moreover, various studies presented a strong and positive relationship between individual's spirituality or spiritual well-being and psychological outcomes like individual success (Ashar & Lane-Maher, 2004), self-esteem (Ellison, 1983), organizational learning (Bierly, Kessler, & Christensen, 2000), mutual trust and honesty (Wagner-March & Conely, 1999); in addition to this previous literature provides positive and robust evidences about transformational leadership (Hartsfield, 2003), organizational performance (Neck & Milliman, 1994) and workplace attitudes (Milliman et al., 2003).

Educational literature has appreciated the spirituality in higher education learning (Astin, 1999; Zajonc, 2003), K-12 schooling (Palmer, 1999), learning promise (Khari & Sinha, 2018), transformative learning (Tisdell, 2017), and adult education (Dirkx, 2013; Tisdell, 2008; Fleming, 2005). Spirituality has been investigated in diversified educational contexts related to curriculum, leadership, culture, and teaching but core focused on the psychological effect of spirituality and hence a big room of exploration is still available to underpin the components of spirituality among the vocational training viewpoint of ICT professionals and regulate the influence on performance of individual as well the organizational levels.

### **1.3 The Question of Relationship between Spirituality and ICT**

The significance of spirituality in ICT environment cannot be ignored, and literature depicts a signified relationship and co-existence also advocates positive impact on educational, professional and social lives of IT professionals (Bertolotti & Cinerari, 2013; Douglas, 2010; Khatri & Gupta, 2016; Straś-Romanowska, Kowal, & Kapała, 2016).

Mueller, Levak, and Rummans (2001) initiated the scientific discussion on spirituality and ICT organized an interest group session "Can We Have Spiritual Experiences Online" at Hague, the Netherlands in Annual Human Factors in Computing Systems Conference in 2000. The conference concluded, "Despite the remarkable advancement of technologies that numerous of us usage or create daily, it seems that the spirituality is a noteworthy portion of connected lives continues to be, in a logic, old-style". Literary examination of Kari (2007) decided that "it is a time for info researchers to jump asking themselves not only how to deed or exploit the context in reaching a holistic picture of the phenomena, but also what the empirical backgrounds that are possibly important to humankind" and reported eleven relationships between spirituality and ICT are:

1. Information can be around the phenomenon of spiritual (mysticism).
2. Information that one can add up holy (Bible).
3. Information can be evidently learned through spiritual means (trance channeling).
4. Information can initiate from a source measured as a spiritual object (God).
5. The information provider or an actor can be like an expert in the spiritual materials, or a spiritual public (like a spiritual advisor).
6. The information actor may be right to own the spiritual abilities (medium).
7. The information actor may develop the spiritually (spiritual vanishing point increasing).
8. An information procedure can be concurrently experienced as a spiritual process (e.g. library work as the ministry).
9. Information schemes can be supposed to similar or even substitute declared spiritual devices (internet as an omnipotent tool).



10. Information miracles can be subjective by a spiritually oriented environment (spiritual happening).
11. Information processes can be supposedly artificial by a spiritual manager or mediator, agent (Providence).

The above discussion shows that there is a significant relationship between spirituality and ICT. Literature also advocates the positive impact of spirituality on the educational, professional and social lives of IT professionals (Khatri & Gupta, 2016; Straś-Romanowska, Kowal, & Kapała, 2016).

## **1.4 Potential Role of Spirituality and Vocational Training**

Edmondson (1999) noted that learning is a recurring and sequential process of design, implement, and reflection of actions needed to saturate. Marsick and Watkins (2003) and Casey (2005) presented that the institutional learning constitutes at three levels i.e. individual, group and organization. Giacalone and Jurkiewicz (2008), Kolodinsky et al. (2008), Petchsawang and Duchon (2012), Miller and Ewest (2013) submitted that the concept of spirituality in institution and work direct towards purposefulness, meaning, and integration with innate meaning and transcendence at individual and team level learning which governs vocational training aspect in connotation with spirituality.

Vocational learning practices have intrinsic winding with spirituality (Shakespeare, 2011). Dempsey (2013) submitted that the vocational training institutions offer professional courses/studies and technical training on variety of subjects. However, the most popular academic and industrial training are ICT. Wright (2016) noted that the research studies from Moore (1934) - Marzano (2003) identified that the theorists and researchers have been reviewing the shared practices and seeking the best out of them to apprehend the student performance.

Tisdell (2008) and Dirkx (2013) governed that the spirituality is studied at individual learning level but with limited scope whereas the studies of Pandey, Gupta, and Kumar (2016) reported the positive impact of spiritual climate on learning to some extent. Current studies revealed that the relationship of learning and spirituality has not yet examined or studied in ICT professionals and vocational training institutions.

Cleveland (2016) highlighted that the student's spirituality is gaining importance since last two decades in schools and focus has been shifted to school-based spiritual connectivity with student counseling in all disciplines resulting in positive outcomes, which can be seen in their improved mental, physical and psychological health. Walt (2007) pointed out that the spiritual dimension has not been considered in vocational training of ICT professionals whereas the trainees' attitude is addressed from spiritual, psychological and physical dimensions in the learning environment.

## **1.5 Research Gap**

Abdelzaher et al. (2017); Bella et al. (2018); Garg (2018); Kalantari and Khalili (2018); Kvarfordt and Herba (2018); Moran (2017); Oxhandler et al. (2017); Walker (2018) explored spirituality and concluded spirituality has positively strong and significant impact on organizational performance, organizational commitment, job satisfaction, employee engagement, employee performance, and employee motivation. Few studies embraced the impact of spirituality on the learning environment.

Pandey, Gupta, and Kumar (2016) and Ross et al. (2018) submitted that spiritual climate has the positive impact on learning environment but spiritual aspects still need to be researched in detail specifically in vocational training perspective. Physical and psychological dimensions have been measured at the workplace (Walt, 2007) but the spiritual dimension has been overlooked for many years in the vocational training of ICT professionals. Therefore, room for research is available for spirituality and learning and seek the relationship and impact or association between them. Previous studies have been done in developed countries, and it can be now seen in developing countries, as there are minimal studies that have been conducted on spirituality in Pakistani perspective specifically in vocational training of ICT professionals.

## **1.6 Definitions of the Constructs**

This section contains the definition of the constructs used in the thesis. The definitions of the constructs are necessary for clear understanding of the concepts. The researcher has used the following terminologies in the thesis.

### **1.6.1 Vocational Training and ICT**

The researcher has considered vocational training as lifetime learning (Cedefop, 2011) because of the changing nature of ICT requirements. Vocational training is defined by the area of training that comes in after entry into working life and aims to help people to improve or update their knowledge and/or skills, acquire new skills for a career move or retraining and continue their personal or professional development (Cedefop, 2008).

In the current research, the author has considered ICT professionals to those who are deeply involved in designing the systems for the betterment of humankind like computer programmers working for some solutions. ICT involves different kind of operations in information technology. In this research, all ICT professionals are highly qualified and having more than Ten years of experience in the ICT field.

### **1.6.2 Spirituality**

There are a different conception of spirituality is defined in the literature but the researcher has used the biological conceptions of spirituality proposed by David Hay in the current research. Author has used the concept of spirituality presented by Hay (2006) which contains awareness sensing, mystery sensing, and value sensing.

## **1.7 Objectives of the Study and Research Problems**

The contemporary challenges, dynamic changes and extensive swiftness forced organizations to conjugate their current state factors of existence and production to ensure the organizational effectiveness and competitive advantage (Walt, 2007) as modern organizations have flexible culture and practices with more emphasis on empowering the workforce and collaborations to cope with contemporary challenges (Burack, 1999). The fast-paced changes and challenges to embrace organizational productivity, it is crucially needed that employees must be committed, involved, creative, happy, and productive to build up a competitive environment. It is not easy to retain such employees or engage them for a long time due to a rapidly changing and challenging environment.

Rutte (2003) highlighted that employees in the highly volatile environment usually got demoralized, stressed, and frustrated due to job insecurity, fear of workload and desire to be

spiritually fulfilled. This unfulfilled desire motivates personnel to find the life insight. Haroutiounian et al. (2000) viewed that the meaning of life (work life) can be fulfilled or answered with the induction of workplace spirituality and it acts as the creation of a significant source. It is a suitable time for organizations to rethink about their current practices and institutionalize a new system that will address the contemporary changes and challenges and can be successfully done once workplace spirituality shall be inculcated. Abdelzaher et al. (2017); Bella et al. (2018); Garg (2018); Kalantari and Khalili (2018); Ke et al. (2017); Kvarfordt and Herba (2018); Moran (2017); Oxhandler et al. (2017); Walker (2018) explored spirituality and concluded spirituality has positively strong and significant impact on different aspects of the organizations. The workplace spirituality can be seen explicitly in organizational culture and its openness to employee empowerment, experiencing spirituality while at work. It is, however, assumed that when the organization is spiritual as well as its employees, value congruence might occur, which may imply even greater organizational outcomes, such as quality, productivity, and profitability.

The core objectives of the current study are to explore what kind of spiritual dimensions exists in the vocational training of ICT professionals, what is the linkage between spirituality and vocational training of ICT professional, how one can explore the role of spirituality in vocational training of ICT professionals by biographical approach, and how spirituality can enrich the vocational training of ICT professionals. The study has four research problems:

- What kind of spiritual dimensions (if any) exists in vocational training of ICT professionals? (Cognitive problem).
- What is the linkage between spirituality and vocational training of ICT professionals?
- How one can explore the role of spirituality in vocational training of ICT professionals by biographical approach? (Methodological problem).
- How can spirituality enrich the vocational training of ICT professionals? (Practical problem).

## 2 Research Paradigm

The main epistemological decision for every research concern is, of course, the research paradigm. For the current research, the author has chosen to use constructive paradigm as an example of the inductive approach. So, the research paradigm of the present study could be described as “Inductive Constructive Paradigm”. From this perspective, social reality is constructed by the relationships and perception of these relationships (Berger and Luckmann, 1967). In consequence, the author of the research assumes the narrative “nature” of studied objects. In this study, the narration is being used as “windows” to explore the objects. This study use narration and discursive approach as an epistemological perspective. In this study, the narration is being used to explore the reality and use content analysis for this purpose. The researcher used the classification of spirituality which can be used as narration.

Table 3.1 represents the research paradigm and philosophical assumption for them (Perry et al., 1999). Table 3.1 presented the paradigm of the current research among research paradigms which exists in contemporary reflection about social science. In the light of this table, the details are mentioned about the elements, positivism, constructive paradigm, critical theory, and realism. This study uses a constructive paradigm in which qualitative study is used to investigate the different dimensions of spirituality.

## 2.1 Background of Methodology

To establish the background of methodology, two perspectives of narrative epistemology are used.

First, in term of classical social constructivism (i.e. Berger and Luckmann, 1967: direct heritage) treat narrations like a story which is telling and constructing social reality. The narration is used as epistemology (cognitive assumptions about the nature of objects) and methodology (the way to explore the objects) for this study. Researcher use narration to uncover the social realities about spirituality. Because social realities are to study the relation and to understand this relationship, consequently, content analysis of narrations is used as a main research method. Wroclaw taxonomy and Nvivo 11 computer software are used to analyze the interview data. Categories of spirituality are used as narratives i-e either our narrations are matched with the spiritual dimensions and questions of David Hay's or not?

Secondly, the discursive/rhetorical look is used in this study. According to this social reality are a process, it is not which is seen, this changes with the passage of time and study settings. Now, this is the discussion point that what kind of process is that. Picture of social realities can be taken from the discussion; this is the plan of this procedure and process itself.

Social realities are the procedure for discussion, but it changes continuously. Someone can only take a picture of these social realities. So, from this epistemological view, the researcher assumes that narration has rhetorical, these are the point of views, and they are not part of the story (Kisielnicki, Ochowski, & Fang, 2010). Logos, pathos, and ethos are pictures of the social realities. The debate of rhetorical methods as epistemology started in 1980s and the experts who are not decided or agreed upon with the ideology of specific corrections they followed to the rhetorical approach (Kisielnicki, Ochowski, & Fang, 2010). The University of Iowa has played an important role in this regard.

As a method of discursive/rhetorical look, the rhetorical analysis is used. According to classical rhetorical approach, logos, ethos, and pathos are analyzed from the interviews. It will be explained in detail later. To explain the results, the researcher draws the correlation matrix to see the impact of variables.

## 2.2 Detailed Methodological Scheme of Study

The particular methodology of the current research is as follows.

1. Interview with eight (8) ICT professionals/experts. The interviews take over 20 weeks, and in many ways, the transformation was desired. On average, 2 to 5 hours were needed per interview, as well the transcript stretched from 12-27 pages. The unit of analysis as sentence and total number of sentences were 2710 (50,989 words). It covers 136 normalized pages of transcription.
2. The interview question contains two parts. Part A contains the important phases of life. The main purpose of asking these questions to explore their personal life perspectives to find out their spiritual orientation. Part B contains questions regarding their work in vocational training of ICT environment. The main purpose of this part is to explore the spiritual dimension and their relationship that exists in their professional life.
3. The researcher has analyzed the interview contents in details and has picked up the spiritual dimensions manually keeping in view the biological conception of spirituality proposed by David Hay.

4. After picking up all spiritual dimensions from the contents of the interview, the researcher has established the process of verification and falsification. The verification process was done by independent judges and a panel of judges having the knowledge of spirituality. All irrelevant and doubted dimensions were deleted by the researcher based on the common feedback of individual and panel of judges. A similar process of falsification was done and participants in this process contain an independent panel of judges to falsify the data based on their judgment. Again, all irrelevant and doubted dimensions were deleted by the researcher based on the common feedback of independent panel of judges.
5. After verification and falsification, categories of spirituality are finalized. In each interview, all manually picked up categories of spirituality are being highlighted by the author. In each highlighted category, reason/criteria to select that category is explicitly written for the sake of clarification.
6. A table that contains the frequency of each category of spirituality for each respondent was designed. Correlation method was applied to the frequency table.
7. On the basis of the correlation matrix, Wroclaw taxonomy was designed to keep the structure of the categories, to find the relation between categories.
8. Nvivo 11 computer software is also used to analyze the contents from the interview data. Node and sub-nodes were created based on the criteria based on spiritual categories. Word frequency and cluster analysis show the structure of the spiritual categories, to find the meaning and relation between spiritual categories.
9. Rhetorical analysis procedure will be described by the researcher in the next sub-chapter. Logos, ethos, and pathos were picked up from the data that contains spiritual dimensions already. A table that contains the frequency of each category of logos, ethos, and pathos for each respondent was designed. Correlation method was applied to this frequency table. On the basis of this correlation matrix, Wroclaw taxonomy was designed to keep the structure of the logos, ethos, and pathos, and to find the meaning and relation between logos, ethos and pathos.
10. The researcher has divided the stages of life of ICT professional into five phases of life: childhood, personal life after childhood, basic education life cycle, professional education life cycle and professional life. Childhood is treated as the stage of life until the five-year schooling; personal life after childhood is treated as started after five years of schooling until the start of professional career; basic education treated as from 6<sup>th</sup> grade of schooling to start of professional education; professional education normally starts from admission in bachelor or masters degree in IT related discipline until the completion of professional education; and professional life contains when ICT professionals starts their career as ICT profession in their practical lives.

### 2.3 The Operationalized Research Problems

In the light of methodology, which is used in presented study, the operationalized research problem of the current research is as follows:

The first cognitive problem *what kind of spiritual dimensions (if any) exists in vocational training of ICT professionals*, is operationalized as:

- *What kind of spiritual dimensions and their patterns can be extracted from the ICT experts semi-biographical narrations using:*
  - a) *narrative analysis, it means:*
    - *manual coding of David Hay's categories of spiritual dimensions,*
    - *Wroclaw taxonomy, and Nvivo analysis of narrations,*

*and*

*b) rhetorical analysis, it means*

*-manual coding of David Hay's categories rhetoric interpretation,*

*-Wroclaw taxonomy of the results of manual coding of David Hay's categories rhetoric interpretation?*

As one can see the first cognitive problem of the study is operationalized by two means, in two, separate epistemological perspectives, which were described in chapter number 3 under 3.3.1: narrative and rhetorical.

In the light of narrative approach "the spiritual **dimensions** extracted from expert narrations" mean the results of manual coding of David Hay's categories of spiritual dimensions, which are present in the experts narration. "The **patterns** of spiritual dimensions" mean the results of Wroclaw taxonomy of mentioned categories and – treated separately – the results of Nvivo analysis of the experts narration in the light of David Hay's conception of spirituality.

The second cognitive problem what is the linkage between spirituality and vocational training of ICT professionals?, is operationalized as:

- *What kind of relationship exists between spiritual dimensions and their patterns and vocational training of ICT professionals, which are available by interpretations of these dimensions and patterns in the context of biographical stages?*

The answer of this problem will be achieved by comparison among stages of life of ICT professionals and spiritual phenomenon.

It's pertinent to mention here that the answer of objective 1 and objective 2 will be discussed together because of the contextual 'nature' of qualitative analysis.

3. What recommendation could be formulated based on this analysis?

### 3 Results: David Hay's Spiritual Dimensions: Frequency Table

After verification and falsification, based on the results of manual coding, the following table shows the frequency of each spiritual dimension presented in each participant.

**Table 1. Frequency Table for David Hay's Spiritual Dimensions**

Dimensions		Ada m	Gabri el	Yaqu b	Toma sz	John	Paul	Mich al	Jam es	Tot al
Awar eness Sensin g	Here and Now	0	1	1	0	1	0	0	0	3
	Tuning	0	1	2	0	2	1	0	1	7
	Flow	1	0	0	1	4	1	3	0	10
	Focusin g	0	0	0	0	0	0	0	0	0
Myste ry	Wonder and Awe	1	4	7	0	4	1	1	0	18

<b>Sensing</b>	<b>Imagination</b>	1	2	2	1	5	1	3	3	<b>18</b>
<b>Value Sensing</b>	<b>Delight and Despair</b>	5	6	7	3	5	4	6	5	<b>41</b>
	<b>Ultimate Goodness</b>	0	0	1	0	0	0	0	1	<b>2</b>
	<b>Meaning</b>	12	6	5	6	9	10	8	8	<b>64</b>

The above mentioned table explains the first objective of research i.e. what kind of spiritual dimensions exist in vocational training of ICT professionals.

‘Value sensing’ is one most influential spiritual dimension found in vocational training of ICT professionals. The frequency of ‘meaning’ is 64, which is most extensively found in ICT professional while the frequency of ‘delight and despair’ is 41, which is the second existing spiritual indicator, found in ICT professionals. In the analyzed data, all respondents have expressed their experience of ‘delight and despair’ in terms of these sub-indicators: the feeling of loss/hopelessness, the feeling of pleasure/excitement, the feeling of being abandoned by higher being, and the feeling of grief/sorrow. Moreover, all respondents have expressed their experience of meaning in terms of to discover oneself (who am I), to identify the purpose, awareness of connection with a higher being, to identify responsibilities/moral sense and experience of values that transcend personal concerns.

‘Mystery sensing’ is another spiritual dimension highly exists in ICT professionals. In mystery sensing, ‘wonder and awe’ and ‘imagination’ equally exist in vocational training of high professionals. The frequency of ‘wonder and awe’ is 18 which is one of the highest existing spiritual dimension while the frequency of ‘imagination’ is also 18 which is equal to ‘wonder and awe’ and both indicators of spirituality equally exists in ICT professionals. In the analyzed data, seven respondents have expressed their experience of ‘wonder and awe’ in terms of these sub-indicators: emotion of reverence and respect, feeling of fear, feeling of admiration of sacred phenomenon, sense of connection with universe transcending consciousness, mystery of the sacred, feeling of amazement, and scientific explanation of wonder. Moreover, in the analyzed data, all respondents have expressed their experience of ‘imagination’ in terms of these sub-indicators: the activity of imagining impossible, investigation of unknown, imagination through metaphor, symbols and stories, and visualize something that is unseen.

The existence of ‘awareness sensing’ is not too much influential but still exists in ICT professionals. Under ‘awareness sensing’, the frequency of ‘flow’ and ‘tuning’ are 10 and 7 respectively. In the analyzed data, five respondents have expressed their experience of ‘flow’ in terms of these sub-indicators: feeling confident to face new challenges, feeling of doing an activity without reward or financial benefits or improved skills, experience of concentrated

attention, and religious rituals can be a source of flow. Moreover, five respondents have expressed their experience of ‘tuning’ in terms of these sub-indicators: heightened aesthetic experience (like listening music), deep understanding, flow of experience, an intense sense of belongings and alienation experience. ‘Here and now’ has least frequency and only three respondents have expressed their experience of ‘here and now’ in terms of ‘immediate experience’.

‘Value sensing’ relates to emotions which is most extensively found in vocational training of ICT professionals. Things with which we are connected the most, become associated with our deep feelings. All the respondents have expressed their experiences of ‘value sensing’ in a more elaborative form. ‘Mystery sensing’ is the second most important element which is described in terms of ‘delight and despair’ and ‘ultimate goodness’. Respondents have expressed their emotions of ‘delight and despair’ and ‘ultimate goodness’ in their personal and professional life both. Moreover, the existence of ‘awareness sensing’ is not too much influential but still exists in ICT professionals. It can be concluded that most of the respondents have expressed their experiences of spirituality in their personal and professional life both.

**Table 2: Correlation Matrix**

		Here and Now	Tuning	Flow	Wonder and Awe	Imagination	Delight and Despair	Ultimate Goodness	Meaning
<b>Here and Now</b>	Correlation Coefficient	1.000	.732*	-0.165	.808*	0.377	0.527	0.149	-0.405
	Significance (Two-sided)		0.040	0.638	0.020	0.279	0.124	0.693	0.227
	N	8	8	8	8	8	8	8	8
<b>Tuning</b>	Correlation Coefficient	.732*	1.000	-0.233	0.592	0.410	0.312	0.441	-0.214
	Significance (Two-sided)	0.040		0.485	0.073	0.215	0.338	0.217	0.502
	N	8	8	8	8	8	8	8	8
<b>Flow</b>	Correlation Coefficient	-0.165	-0.233	1.000	0.000	0.133	-0.261	-0.615	0.418
	Significance (Two-sided)	0.638	0.485		1.000	0.681	0.415	0.080	0.183
	N	8	8	8	8	8	8	8	8
<b>Wonder and Awe</b>	Correlation Coefficient	.808*	0.592	0.000	1.000	0.217	.638*	0.060	-0.204
	Significance (Two-sided)	0.020	0.073	1.000		0.500	0.044	0.863	0.512
	N	8	8	8	8	8	8	8	8
<b>Imagination</b>	Correlation Coefficient	0.377	0.410	0.133	0.217	1.000	0.298	0.241	0.000



	Significance (Two sided)	0.279	0.215	0.681	0.500		0.348	0.489	1.000
	N	8	8	8	8	8	8	8	8
<b>Delight and Despair</b>	Correlation Coefficient	0.527	0.312	-0.261	0.638	0.298	1.000	0.354	-0.400
	Significance (Two sided)	0.124	0.338	0.415	0.044	0.348		0.302	0.193
	N	8	8	8	8	8	8	8	8
<b>Ultimate Goodness</b>	Correlation Coefficient	0.149	0.441	-0.615	0.060	0.241	0.354	1.000	-0.396
	Significance (Two sided)	0.693	0.217	0.080	0.863	0.489	0.302		0.238
	N	8	8	8	8	8	8	8	8
<b>Meaning</b>	Correlation Coefficient	-0.405	-0.214	0.418	-0.204	0.000	-0.400	-0.396	1.000
	Significance (Two sided)	0.227	0.502	0.183	0.512	1.000	0.193	0.238	
	N	8	8	8	8	8	8	8	8

Source: Correlation matrix of table 4.3

To explain the results, the author draws the correlation matrix to see the interconnectedness of the spiritual dimensions. In Table 2, correlation results show that 'here and now' and 'wonder and awe' are strongly, positively and significantly associated with each other. The correlation coefficient is 0.8 which shows a strong relationship between 'here and now' and 'wonder and awe'. This means participants who possess a feeling of 'here and now' will also strongly possess 'wonder and awe'.

'Here and now' is also significantly and strongly related with 'tuning' having a correlation coefficient of 0.7. However, 'here and now' is more correlated with 'wonder and awe' than 'tuning'. On the other hand, 'wonder and awe' is positively and significantly related with 'delight and despair' but this association is comparatively weak as can be seen by the correlation coefficient which is 0.63.

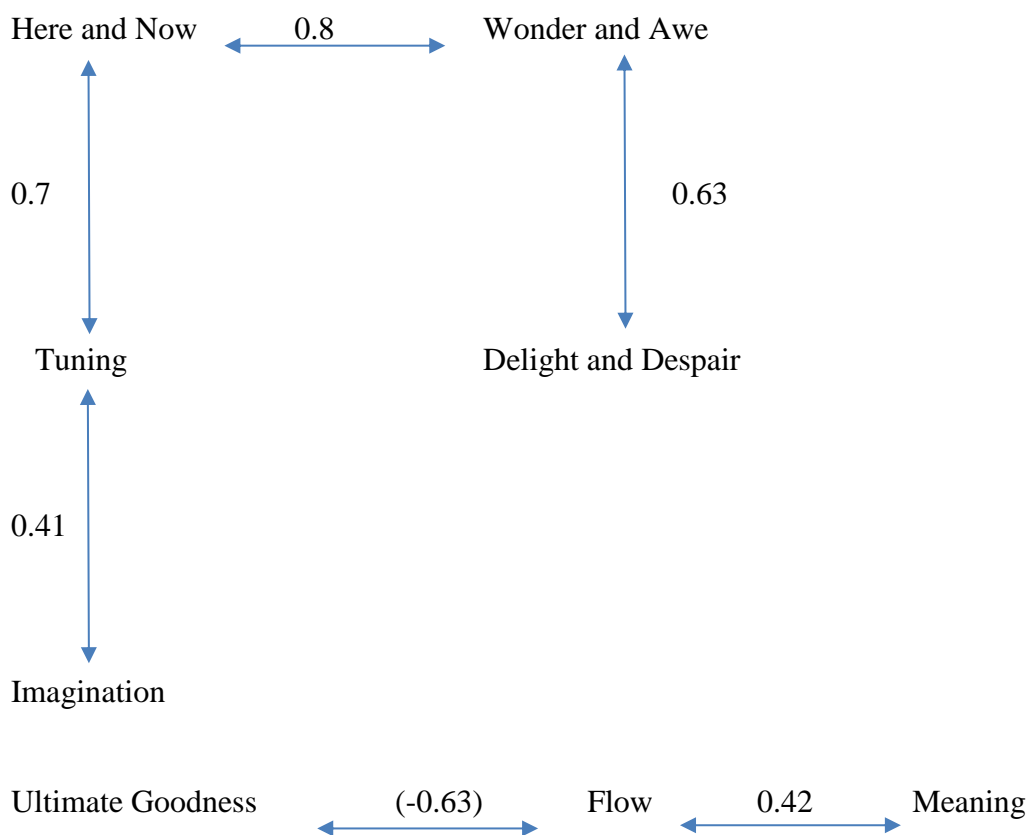
Therefore, we can say that participants are inclined towards the feeling of 'wonder and awe' and 'here and now'. 'Tuning' and 'imagination' are also found to be weakly correlated but this correlation is statistically insignificant. Flow is weakly associated with 'meaning' but again statistically insignificant. Similarly, 'flow' is also weakly and negatively related to 'ultimate goodness' but insignificantly. Here we can say that the relationship between 'flow' and 'meaning' and 'flow' and 'ultimate goodness' exist but it cannot be confirmed statistically which means there is no strong statistical evidence available on the presence of this relationship between 'flow' and 'meaning', and 'flow' and 'ultimate goodness'.

### 3.1 Taxonomy Diagram: Result Analysis

As it was discussed earlier in research methodology chapter (Chapter three of this thesis), that taxonomy diagram is used to analyze the results of manual coding. Taxonomy diagram is drawn from correlation matrix presented in the above mentioned table. This is just the statistical correlation but the researcher used the context as a guideline for final interpretation.

Taxonomy diagram answers the second **problem** of the research that **what is** the structure of relationship between spiritual dimensions and vocational training of ICT professionals. Moreover, taxonomy diagram describe the relationship between spiritual dimensions and vocational training of ICT professionals. Figure 4.1 shows the two cluster diagrams, which not only shows the associations in spiritual dimensions but also, explain the impact of spirituality in vocational training of ICT professionals.

**Figure 2. Taxonomy Diagram**



Taxonomy diagram described in the figure 2 shows that 'here and now' has strong connection with 'wonder and awe'. When someone has focus on "here and now", he/she can feel this "wonder and awe". This is the way that one can develop spirituality in everyday life. Concentrate on 'here and now' at this moment, in effect, one can feel "wonder and awe" or reverse. This fact can be explained from the result analysis of interviews. In the analyzed data, some of the respondents have expressed their feeling of 'here and now' in terms of 'immediate experience' in their professional life in ICT environment. They have reported that when they stuck in some situation during his work, their feelings of immediate experience leads them to get out of that difficult situation. The ultimate impact of this 'immediate experience' can be 'wonder and awe' in terms of feeling of admiration of sacred phenomenon or mystery of sacred.

As John expressed his experience of 'wonder and awe' in terms of feeling of admiration of sacred phenomenon. John described that if a human being can have big achievement because of learning, then one must wonder what God can do since he has the ultimate superpower. John attached his feeling of achievements with mystery of sacred and also relates his immediate experience of finding some solution in the same context. This is quite logical that you are a focus on 'here and now', that when you are very involved in your work, you can feel 'wonder and awe'. This is just kind of enlightenment; probably enlightenment at work, probably this is the sense.

There is also a chance to feel this 'tuning' when you feel 'here and now' and vice versa. The taxonomy diagram shows the relationship between 'here and now' and 'tuning'. In the analysis, John expressed his feeling of 'tuning' in terms of 'deep understanding' with work in ICT environment. John reported that IT profession is coherent with my learning passion and this was the main reason of joining the IT profession. When someone is deeply involved in his work then the reaction can be 'immediate experience' which is one of the sub-indicator of 'here and now'. John has expressed his feeling of 'tuning' in terms of 'deep understanding' with the profession of information technology. When he deeply involves in his work, the impact was 'immediate experience' that is sub-indicator of 'here and now'. This situation clearly described the relationship between 'here and now' and 'tuning'.

Taxonomy diagram shows that 'wonder and awe' is also very close to other spiritual dimensions 'delight and despair'. This aspect of spirituality is cognitive and relational. This is very clear that there are emotions, wonder and awe, and delight and despair. In the analyzed data, respondents have expressed their experience of 'wonder and awe' in terms of these sub-indicators: emotion of reverence and respect, feeling of fear, feeling of admiration of sacred phenomenon, sense of connection with universe transcending consciousness, mystery of the sacred, feeling of amazement, and scientific explanation of wonder. Mystery of sacred and scientific explanation of wonder creates feeling of pleasure or excitement which is one of the indicator of 'delight and despair'. Sometimes when a person feels connected with something which is beyond his perceptions and realizations, for example, when there is a feeling of helplessness and a person is misguided, there is always an invisible hand that guides and helps in the times of pains and difficulties. This way, we sense that something is connected with us in a mysterious way and the time when we find solutions to our problems and answers to our questions, we get a feeling of pleasure or excitement with some element of amazement which 'delight and despair'. Its quite clear that there are two very clear emotional dimensions. One belongs to value and mystery as they have a very big correlation between them, and they come together (wonder and awe belongs to mystery sensing and delight and despair belong to value sensing).

Taxonomy diagram shows that 'tuning' is also very close to 'imagination'. In the analyzed data, respondents have expressed their experience of 'imagination' in terms of these sub-indicators: the activity of imagining impossible, investigation of unknown, imagination through metaphor, symbols and stories, and visualize something that is unseen. Moreover, respondents expressed their feeling 'tuning' in terms of heightened aesthetic experience (like listening music), deep understanding, flow of experience, an intense sense of belongings and alienation experience. This is very clear where there is 'tuning' in terms of deep understanding, it creates imagination in terms of imagining something that might be impossible. For example, John has shared his experience of 'tuning' in terms of deep connection with IT field and because

of this he involve too much in his work and result is imagination in terms of imagining impossible. The above discussion clearly shows how David Hay's Spiritual dimensions really work, how these dimensions collaborate with each other.

In the second part of taxonomy diagram, second cluster is given below.



The second part of Figure 2 shows 'ultimate goodness' is opposite to 'flow'. This might be because ultimate goodness is heritage of childhood experience and flow is an adult experience. In the analyzed data, respondents have expressed their experience of 'ultimate goodness' in terms of feeling about that everything is all right and having trust in someone. Moreover, respondents have expressed their experience of 'flow' in terms of feeling confident to face new challenges, feeling of doing an activity without reward or financial benefits or improved skills, experience of concentrated attention, and religious rituals can be a source of flow. Only two respondents have expressed their experience of 'ultimate goodness' in terms of feeling about that everything is all right. In the analyzed text, respondent shows negative relations of ultimate goodness with flow. Respondent feels flow very often, and ultimate goodness very rare as it is deeply rooted in childhood.

In the second part of taxonomy diagram, the diagram shows that 'flow' is also correlated with 'meaning'. The sense of 'meaning' can be one of the condition to feel the 'flow'. As the researcher has already discussed how the respondents have expressed their experience of 'flow' in terms of feeling confident to face new challenges, feeling of doing an activity without reward or financial benefits or improved skills, experience of concentrated attention, and religious rituals can be a source of flow. It is necessary to represent how the respondents have expressed their experiences of meaning in their life. The respondents have expressed their experiences of 'meaning' in terms of to discover, to discover himself (who am I), to identify the purpose, awareness of connection with a higher being, to identify responsibilities/moral sense and experience of values that transcend personal concerns. This relationship shows that there is chance to feel meaning if someone feels flow.

## 3.2 Result Analysis by Nvivo 11

The researcher has already explained the process of verification and falsification in chapter 3 in detail. Nvivo 11 was used in this study to accomplish qualitative results and to confirm consistency in analysis process (Bazeley, 2007). Applying the manual coding and the Nvivo analysis methods, the purpose is no explanation of the data remained ignored. Additionally, using these two methods supplement one another.

### 3.2.1 Concept Analysis

The researcher emerged codes by using concept mapping and the flow of information. The transcribed interviews were prepared for the coding or analyses. After verification and falsification in manual coding, the verified codes was moved to computer for additional analysis. By using Nvivo 11, a node for every sub-indicator was created by the researcher in the light of David Hay's conception of spirituality. For example, 'intense concentration' is one of the nodes under 'awareness sensing'. The researcher was able to see all nodes of 'intense concentration'

by opening that node. In this way, it's easy to sort out that how many participants spoke about 'intense concentration' and how often it appears in the whole conversation. Table 3 presents all the nodes, a number of coding references and number of items coded are described against each node.

According to table 3 which described the nodes, coding reference, and number of items coded, this is quite clear that the majority of the themes are from 'value sensing (N=105) from all the respondents. All the respondents talked about 'value sensing'. In the conception of David Hay, 'value sensing' has three indicators: delight and despair, ultimate goodness and meaning. All the respondents have described their experiences of 'delight and despair' in terms of awareness of the presence of higher being, the feeling of loss/hopelessness, the feeling of pleasure/excitement, the feeling of being abandoned by higher being, and the feeling of grief/sorrow. Moreover, respondent have talked about the experiences of 'ultimate goodness' in terms of feeling that everything is all right and having trust in someone. Furthermore, respondents have talked about the experiences of 'meaning' in terms of 'to discover about himself (who am I), to identify the purpose, awareness of connection with a higher being, to identify responsibilities/moral sense and experience of values that transcend personal concerns.

**Table 3: Nodes, Coding Reference, and Number of Items Coded**

Nodes	Number of coding references	The aggregate number of coding references	Number of items coded	The aggregate number of items coded
Nodes\Awareness Sensing	20	58	8	8
Nodes\Awareness Sensing\Flow	10	20	5	5
Nodes\Awareness Sensing\Flow\Experience of Concentrated Attention	3	3	2	2
Nodes\Awareness Sensing\Flow\Feeling Confident to Face New Challenges	2	2	2	2
Nodes\Awareness Sensing\Flow\Feeling of Doing an Activity without Reward or Financial Benefits or Improved Skills	4	4	3	3
Nodes\Awareness Sensing\Flow\Intense Concentration	1	1	1	1
Nodes\Awareness Sensing\Here and Now	1	4	1	3
Nodes\Awareness Sensing\Here and Now\Immediate Experience	2	2	2	2
Nodes\Awareness Sensing\Here and Now\Intensity and Immediacy of Awareness	1	1	1	1
Nodes\Awareness Sensing\Tuning	7	14	5	5
Nodes\Awareness Sensing\Tuning\Experience of Alienation	1	1	1	1

Nodes\\Awareness Sensing\\Tuning\\Feeling of Harmony or at one with Environment	4	4	4	4
Nodes\\Awareness Sensing\\Tuning\\IntenseSense of Belonging	1	1	1	1
Nodes\\Awareness Sensing\\Tuning\\Profound Empathy or Deep Understanding	1	1	1	1
Nodes\\Mystery Sensing	18	72	8	8
Nodes\\Mystery Sensing\\Imagination	18	36	8	8
Nodes\\Mystery Sensing\\Imagination\\Activity of Imagining Impossible	1	1	1	1
Nodes\\Mystery Sensing\\Imagination\\Awareness of Life's Incomprehensible Experiences	1	1	1	1
Nodes\\Mystery Sensing\\Imagination\\Imagination through Metaphor, Symbols and Stories	7	7	5	5
Nodes\\Mystery Sensing\\Imagination\\Investigation of Unknown	4	4	2	2
Nodes\\Mystery Sensing\\Imagination\\Visualize Something Unseen or Unreal	5	5	5	5
Nodes\\Mystery Sensing\\Wonder and Awe\\Emotion of Reverence and Respect	3	3	3	3
Nodes\\Mystery Sensing\\Wonder and Awe\\Feeling of Admiration of Sacred Phenomenon	1	1	1	1
Nodes\\Mystery Sensing\\Wonder and Awe\\Feeling of Fear with Wonder	1	1	1	1
Nodes\\Mystery Sensing\\Wonder and Awe\\Mystery of the Sacred	6	6	3	3
Nodes\\Mystery Sensing\\Wonder and Awe\\Scientific Explanation of Wonder	1	1	1	1
Nodes\\Mystery Sensing\\Wonder and Awe\\Sense of Connection with Universe Transcending Consciousness	6	6	4	4
Nodes\\Value Sensing	105	318	8	8
Nodes\\Value Sensing\\Delight and Despair	39	80	8	8
Nodes\\Value Sensing\\Delight and Despair\\Awareness of Presence of Higher Being or Transcendence	3	3	2	2
Nodes\\Value Sensing\\Delight and Despair\\Feeling of Grief or Sorrows	6	6	4	4
Nodes\\Value Sensing\\Delight and Despair\\Feeling of Loss or Hopelessness	5	5	3	3

Nodes\\Value Sensing\\Delight and Despair\\Feeling of Pleasure or Excitement	27	27	8	8
Nodes\\Value Sensing\\Meaning	64	129	8	8
Nodes\\Value Sensing\\Meaning\\Awareness of Connection with Higher Being or Transcendence	6	6	4	4
Nodes\\Value Sensing\\Meaning\\Discover about Oneself, Who am I.	11	11	5	5
Nodes\\Value Sensing\\Meaning\\Experience of Values that Transcend Personal Concerns	1	1	1	1
Nodes\\Value Sensing\\Meaning\\Identify Responsibilities or Moral Sense.	31	31	8	8
Nodes\\Value Sensing\\Meaning\\Identify the Purpose	16	16	7	7
Nodes\\Value Sensing\\Ultimate Goodness	2	4	2	2
Nodes\\Value Sensing\\Ultimate Goodness\\Feeling that Everything is Alright Independent of Everyday Difficulty or Danger	2	2	2	2

Table 3 also depicts the themes from ‘mystery sensing’. According to biological conception of spirituality proposed by David Hay, ‘mystery sensing’ has two indicators: ‘wonder and awe’ and ‘imagination’. Frequency of indicators are 18 each. The respondents have described their experiences of ‘wonder and awe’ with these sub-indicators: emotion of reverence and respect, feeling of fear, feeling of admiration of sacred phenomenon, sense of connection with universe transcending consciousness, mystery of the sacred, feeling of amazement, and scientific explanation of wonder. Moreover, the respondents have described their experiences of ‘imagination’ in terms of the activity of imagining impossible, investigation of unknown, imagination through metaphor, symbols and stories, and visualize something that is unseen.

Moreover, Table 3 also depicts the themes from ‘awareness sensing’. According to biological conception of spirituality proposed by David Hay, ‘awareness sensing’ has four indicators: ‘here and now’, ‘tuning’, ‘flow’ and ‘focusing’. According to table 3, frequency of ‘here and now’ is three described by three respondents, frequency of ‘tuning’ is seven described by five respondents, frequency of ‘flow’ is ten described by five participants and no respondent shared their experience of ‘focusing’ in all the interviews. ‘Here and now’ has these sub-indicators: point mode, to live in present, immediate experience and intensity, and immediacy of awareness. Moreover, ‘tuning’ has some indicators: heightened aesthetic experience (like listening music), deep understanding, flow of experience, an intense sense of belongings and alienation experience. Furthermore, ‘flow’ has these indicators i.e. feeling confident to face new challenges, feeling of doing an activity without reward or financial benefits or improved skills, experience of concentrated attention, and religious rituals can be a source of flow.

The interesting point about the table 3 is that this table not only described the frequency of each indicator, but also described the frequency of each sub-indicator. This table also explains how many participants spoke about each sub-indicator and how often it appears in the whole

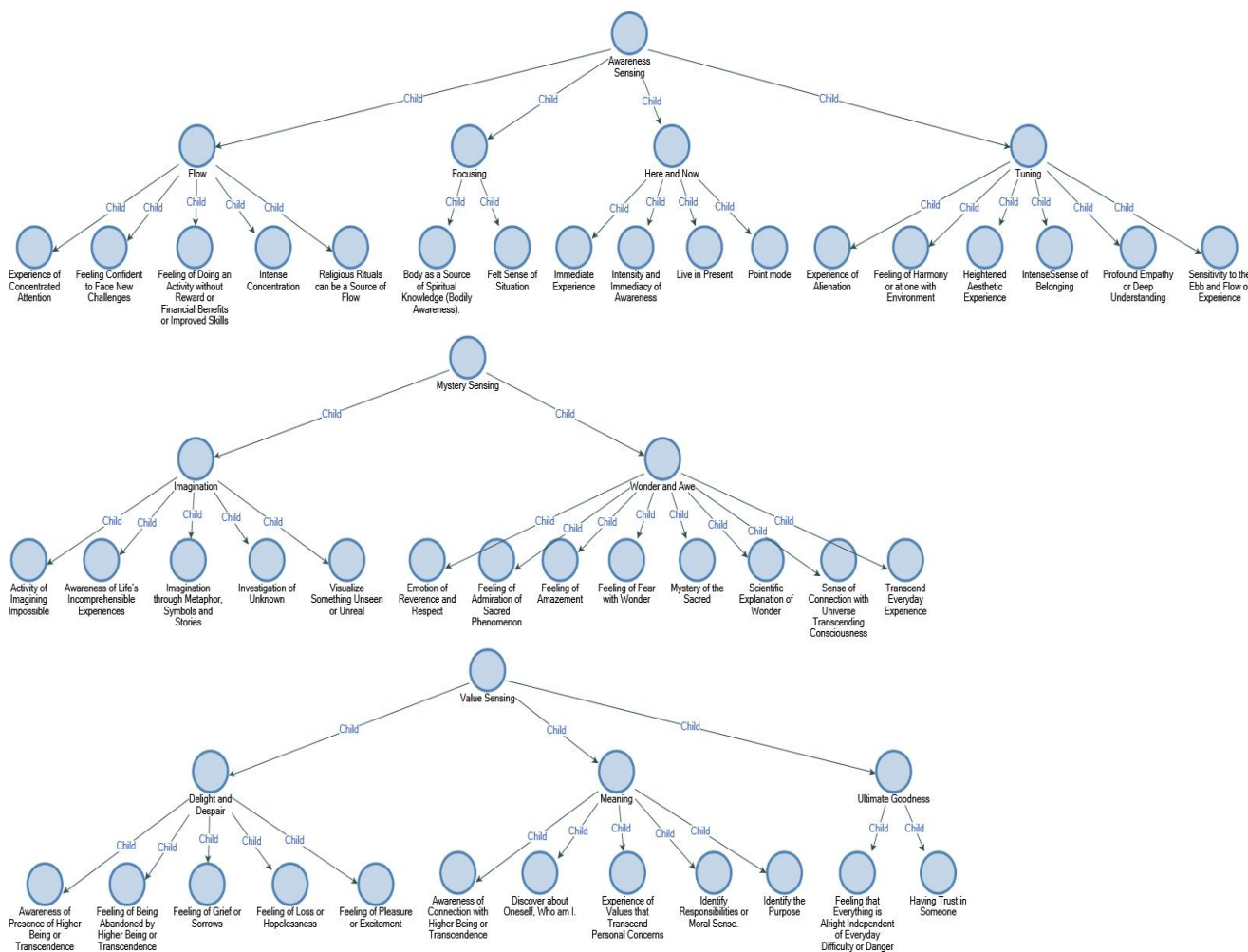
conversation. This information was not available like this in the results of manual coding which shows only the frequency of main dimensions of spirituality.

### 3.2.2 Graphical Representation of David Hay’s Biological Conception

Figure 3 described the graphical version of David Hay’s biological conception of spirituality.

Figure 3 clearly described the all nodes mapping which includes awareness sensing, mystery sensing and value sensing. This figure also graphically described the sub-indicators of each dimension of spirituality.

**Figure 3: All Nodes Mapping (David Hay’s Conception)**



### 3.2.3 Cluster Analysis

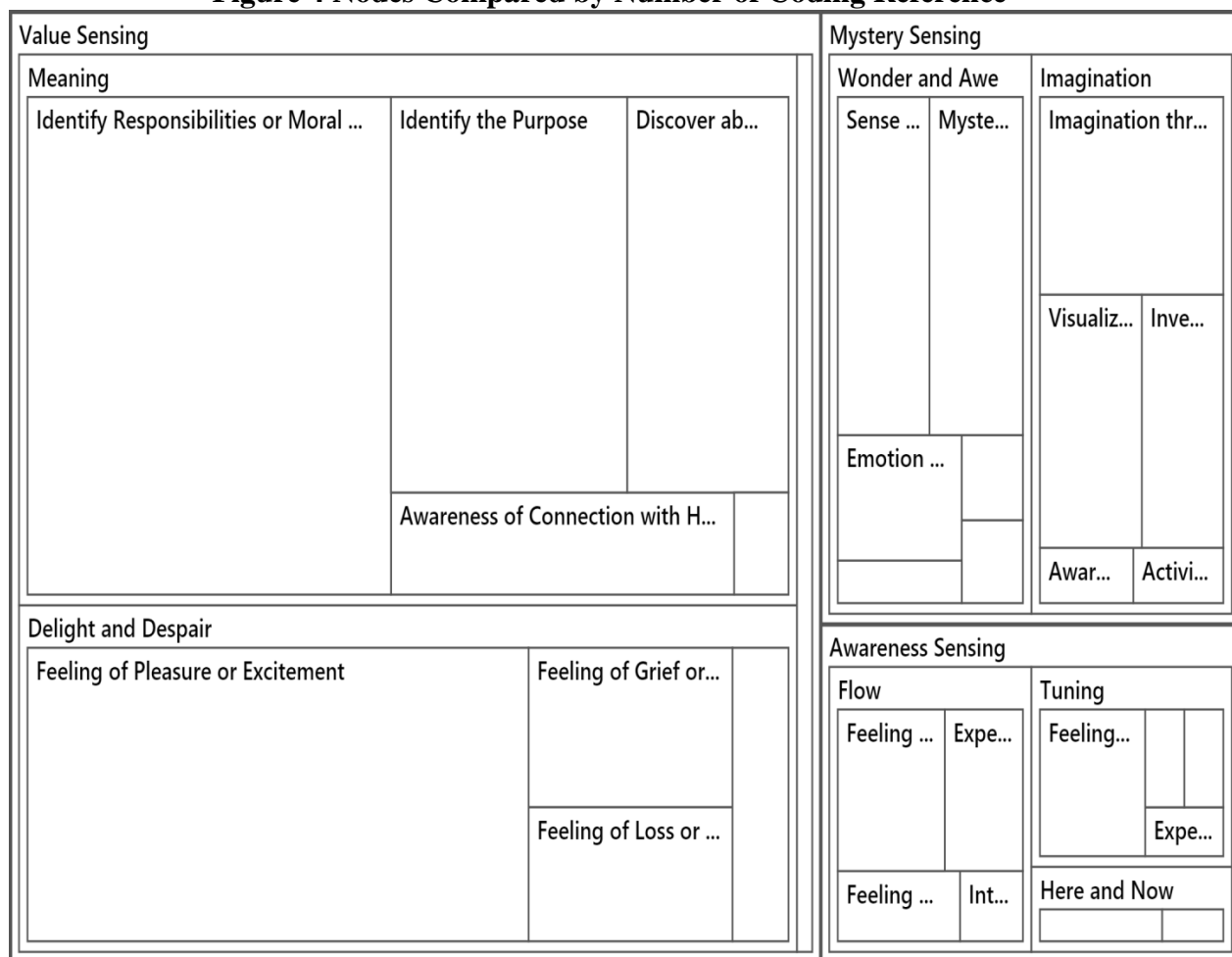
Nvivo presents an exploratory procedure named as ‘cluster analysis’ which is used to find out data pattern by making groups of similar values and concepts. Cluster analysis charts give a graphical introduction of sources or subject to make it simple to see differences and similarities. Closer subjects in group indicate comparability in the importance when compared with those which are far separated. Huang and Lai (2006) highlight that when there is a huge amount of data and it is difficult for the user to realize all at the same time, cluster chart is exceptionally useful. In their view, “a clustered graph can greatly reduce visual complexity by temporarily replacing a set of nodes in clusters with abstract nodes”. Word similarity shows topics which are



increasingly identified with one another dependent on the event and recurrence of words appear as a group together and subjects with a lower degree are further separated.

Treemap is utilized to look at different codes and themes which graphically demonstrates themes and codes against each topic (Figure 4). A treemap is a diagram that presents data in the type of nested rectangles shapes of various sizes. The measure of every rectangle shape describes a number of coding references for each topic. Bruls, Huizing, and Wijk (2000) called attention to that treemaps are compressed and organized presentations, which demonstrates the size of final components in the structure. In figure 4, a treemap highlights the coding references on each significant subject, i.e ‘awareness sensing’, ‘mystery sensing’, and ‘value sensing’.

**Figure 4 Nodes Compared by Number of Coding Reference**



The large rectangle shows that in the data most of the references are a form that particular theme and that how and in which form David Hay’s dimensions of spirituality exists in the vocational training of ICT professionals. Major references are ‘identify responsibilities/moral sense’, ‘identify the purpose’, ‘discover about oneself’, ‘awareness of connection with higher being/transcendence’ and ‘feeling of pleasure/excitement. Among these, the first three themes lie under ‘meaning’, indicator of ‘value sensing’ whereas the last themes come under ‘delight and despair’, indicator of ‘value sensing’. These references lie in the ‘meaning’ that is the dimension of ‘value sensing. With respect to our second dimension of spirituality ‘mystery sensing’, figure 4 shows the larger rectangles which represent ‘sense of connection with universe transcending consciousness’, ‘mystery of sacred’, ‘emotion of reverence and respect’, ‘imagination through metaphors/symbols and stories’, ‘visualize something unseen/unreal’ and ‘activity of imagining impossible’. Among these themes, the first three themes lie under ‘wonder

and awe' indicator of 'mystery sensing' whereas the last three themes belong to 'imagination' which is another indicator of 'mystery sensing'. Lastly, figure 4 represents large rectangles of our third dimension of spirituality that is 'awareness sensing'. This dimension of spirituality exists very rarely in ICT professionals as can be seen from the sizes of rectangles in figure 4. However, this dimension exists mostly in form of 'flow' and 'tuning'. Furthermore, a few themes from 'flow', which exist the most are 'feeling of doing an activity without reward' and 'experience of concentrated attention' whereas 'feeling of harmony or at one with the environment' is the theme which mostly exists under 'tuning' which is another indicator of 'awareness sensing'.

## 4 Discussions on Research Findings

The presented research is devoted to answer four questions: first is what kind of spiritual dimensions exists in vocational training of ICT professionals (cognitive problem), second is what is the linkage between spirituality and vocational training of ICT professionals, third is how one can explore the role of spirituality in vocational training of ICT professionals by biographical approach (methodological problem), and and fourth is how spirituality can enrich the vocational training of ICT professionals (practical problem). In the discussion part, objective 1 and objective 2 will be discussed together.

Sufi traditions are treated in this study as a cultural source for data interpretation. This concept play a role of inspiration, specific "light" for enriching researcher view on his results. This is the inspiration which is based on human cultural heritage. So, the so-called secular readings of Sufi ideas are proposed in this study. The Sufi traditions were used as supporting framework for data interpretation because of the cultural background of the experts.

### 4.1 Discussion on Problems 1 & 2: Spiritual Dimensions and their Relationship in Vocational Training of ICT Professionals

The first objective of the research was to explore the presence of spiritual dimensions in vocational training of ICT professionals. Therefore, the first problem is **what kind of spiritual dimensions (if any) exist in vocational training of ICT professionals?**

The second objective of the research was to explore the linkage between spirituality and vocational training of ICT professionals. Therefore, the problems number two is **what is the relationship between spiritual dimensions and vocational training of ICT professionals?**

The spiritual dimensions, which were found by manual coding and patterns of these dimensions, which were found both by Wroclaw analysis were presented in chapter four of this thesis. The interpretation of these results in the light of mentioned objective one and objective two will be presented now.

The answer of the objective one will be achieved by discussion of the essence and meaning of spiritual dimensions and their patterns, which were emerged in this study as working in ICT professionals life.

The answer of the objective two will be achieved by comparison among stages of life of ICT professionals and spiritual phenomena.

The logic of qualitative analysis, requiring a contextual approach, prompts researcher to discuss both problems together.

### **4.1.1 Problem 1: Spiritual Dimensions and their Patterns exist in Vocational Training of ICT Professionals**

The results of manual coding shows the presence of ‘awareness sensing’, ‘mystery sensing’ and ‘value sensing’ and their respective indicators and sub-indicators in vocational training of ICT professionals.

In **childhood**, expert has expressed his experience of ‘delight and despair’ with reference to ‘feeling of grief/sorrows’ which is one of the indicator of ‘value sensing’. Most people are more sensitive in childhood, so they feel happiness and sorrows with small things. This expression creates sorrows in the narrations of ICT professionals in their childhood.

In **personal life after childhood**, ‘tuning’ creates the feeling of experience of alienation while ‘flow’ creates the feeling of performing an activity without reward. Moreover, feeling of ‘wonder and awe’ is helpful in creating sense of connection with universe transcending consciousness, emotions of reverence and respect and the mystery of the sacred; while the ‘imagination’ is helpful in imagining impossible, investigation of unknown, imagination through metaphor, symbols and stories, and visualizing something that is unseen. Furthermore, ‘delight and despair’ in creating awareness of the presence of higher being and the feeling of pleasure and excitement while ‘ultimate goodness’ is helpful in creating the feeling about that everything is all right. In addition, experts have reported their experiences of ‘meaning’ with reference to discover about oneself and identification of purpose of life.

In the phase of **basic education**, ‘flow’ creates experience of concentrated attention which is helpful in deep understanding of the phenomenon. Moreover, ‘delight and despair’ creates the feeling of loss/hopelessness and the feeling of grief/sorrow.

In **professional education**, ‘flow’ is helpful in creating an experience of concentrated attention which is quite helpful in understanding depth of the problem.

In **professional life**, the study highlight the presence of ‘here and now’, ‘tuning’ and ‘flow’ and their sub-indicators as well. Moreover, the study shows the presence of ‘wonder and awe’ and ‘imagination’ and their role in professional life of ICT professionals. Further, this is evident that ‘delight and despair’, ‘ultimate goodness’ and meaning an important role in creating meaning/purpose of life, creating responsive and positive environment, creating morality, and creating positive values in professional life of ICT professionals.

The summary of narrations analysis also highlights that ‘value sensing’ is the central dimension exists in vocational training of ICT professionals. Moreover, ‘awareness sensing’ and ‘mystery sensing’ and their respective indicators and sub-indicators also exist in vocational training of ICT professionals. It is pertinent to mention here the results of manual coding and Nvivo are consistent with each other.

### **4.1.2 Problem 2: Relationship between Spiritual Dimensions and Vocational Training of ICT Professionals**

In **professional life**, ‘here and now’ is helpful in finding the solution of the problems and ‘tuning’ is helpful in creating deep understanding of information technology and the person having feeling of tuning is more deeply involved in his work. Moreover, ‘flow’ plays an important role to provide courage to face new challenges, provide feeling of satisfaction, and create empathy to others in professional life of ICT professionals. Furthermore, ‘wonder and awe’ plays an important role in creating hope to cope up with difficult situations, and to create well-mannered working environment with emotion of respect while the ‘imagination’ plays a

key role to provide creativity and encouragement to ICT professionals to do impossible things in vocational training of ICT professional. The results also shows that ‘delight and despair’ is quite dominant in the professional life of ICT professionals and it creates a vital role in the development of the positive ICT environment. The results highlights that the person who feels ‘ultimate goodness’ is more patience in tough times. In addition, ‘meaning’ plays an important role in creating meaning/purpose of life, creating responsive and positive environment, creating morality, and creating positive values in professional life of ICT professionals.

The results of the taxonomy diagram shows some meta-categories, which means how spiritual dimensions work together. When these categories work together, it creates a new meta-category. In the light of Wroclaw taxonomy analysis results, two patterns of spiritual dimensions emerged from expert’s narrations: enlightenment and feeling of sense. In the light of results of presented research, enlightenment at work is when a person focuses on ‘here and now’, then he/she is deeply involved in work, and can feel ‘wonder and awe’. The feeling of sense is that there is chance to feel ‘meaning’ if someone feels ‘flow’. From the taxonomy diagram, following conclusion can be summarized. When someone solved problem in a sensitive/difficult situation, the results can be amazement or thankful to higher being for this success. Furthermore, sometimes a person feels connected with something which is beyond his/her perceptions and realizations, and then he/she has a feeling that there is an invisible hand that guides and helps in the times of pains and difficulties. It is also derived from the taxonomy diagram that where there is ‘tuning’ in terms of deep understanding, it creates imagination in terms of imagining something that might be impossible. The results also show that ‘ultimate goodness’ creates a peace of mind in ICT professionals and effect of ‘flow’ is to encourage ICT professionals to face new challenges with passion and creates feeling of satisfaction in ICT professionals. Finally, it is concluded that there is chance to feel meaning if someone feels flow.

#### **4.1.3 Discussion on Problem 1 & 2 in the Light of Sufism and Monika Kostera**

This is clear from the above discussion that spiritual dimensions exist in different forms of indicators in Sufism. For example, awareness of the presence of Higher being is treated as ‘Faith’ (Kamil et. al. 2015) which was one of the sub-indicator of ‘delight and despair’ in the David Hay’s conception of spirituality. Faith is the pillar of Sufism, everything belongs to faith. In Sufism, awareness of presence of higher being makes someone more human and kind towards others. This awareness is helpful in making soul more pious. This faith creates a belief that every human being is creature of higher being and it is important to be more humane towards mankind. This belief creates harmony among the people which leads to peaceful society. This is because of this belief, the follower of Sufism are more patient and peace-loving people. The ultimate impact of this harmony is well-mannered diversity management in the office environment and in the society as well. In ICT environment, because of sensitive nature of job, positivity in the environment is highly required. Someone can be more creative and more productive because of feeling of presence of higher being (Corbin, 2013).

In the light of Sufism, ‘ultimate goodness’ an important feature that is deeply found in Sufism (Ahmad, 1992). In Sufism, ultimate goodness creates a belief that everything, whether it is good or bad, belongs to higher being and if something is from higher being then it is good. This sense of ultimate goodness creates patience in human being and he/she is always thankful to higher being in every kind of situation. For example, in difficult or hard times, ultimate goodness makes someone more humble and patient because of the belief that this situation is a personal

assessment from higher being. The impact of this belief makes someone more strong and positive to handle every kind of situation. Ultimate goodness creates resilience in human being to handle the difficult situation. In ICT environment, every day is full of challenges because sensitive nature of the job and its required that ICT professionals should be more resilient to handle these challenges. This impact of spirituality creates patience in tough times and creates a peace of mind which is always helpful to handle difficult situations (Hay and Nye, 2006).

Sufism is mystical form of cultural context of participants. In the teaching of Ibn Arabi, creative imagination is deeply involved in Sufism (Corbin, 2013). For instance, when he urges readers to consider the arrival to God as a sort of voyage, in *The Books of Journeying*, he is conveying the metaphor of journey and utilizing that to incite a creative imagination of how we may move "from Him", "to Him" and "in Him". Imagination through metaphor is quite common in Sufism as Sufi always believe that this world is temporary and ultimately all of us will go towards higher being. This creative imagination open horizon to go towards unseen truth. In ICT environment, imagination is the key element in designing the high levels of programs. The journey of reality starts from imagination and becomes reality. Someone cannot imagine the about the current discoveries of science in the last decade because of their rapid changes especially in the field of ICT. ICT discoveries is the fruit of imagination.

Monika Kostera has also highlighted the concept of imagination and considered imagination is an important mode of experience in spirituality (Kostera, 2005). Kostera (2005) has also emphasized on the concept of awareness in spirituality. Free flow of life energy makes life full of enjoyment and ease (Kostera, 2005). In Sufism, ultimate goodness is the key spiritual dimension defined by Ghazali and Rabia Basri (Ahmad, 1992).

#### **4.1.4 Rhetorical Nature of Spiritual Dimensions in Vocational Training of ICT Professionals**

In rhetorical point of view, spirituality has a rational nature with an inherent emotional component. Spirituality also emerged as rational discourse about values (believes) that are involved in emotions. The results of taxonomy analysis shows that spirituality is a kind of close relations between feelings (pathos), believes (ethos) and rational thinking (logos), but not a pure rational believes. The important perspective is emotions as there is a rare existence of values (believes) without emotions. There is a combine link between believes (ethos) and rational thinking (logos) in spirituality but with crucial emotional component. It means the values that are involved in spirituality plays an existential role.

In Sufism, kindness/emotions and conciseness is the central element of humanistic view to Sufism (Arian, 2015). Every human being should be respected the basic theme of Sufism. In the light of Sufism, believability (ethos) is an important feature that is deeply discussed in spiritual path (Ahmad, 1992) while this believability is highly associated with values and feelings (pathos). Because of this belief, interpersonal values (how you behave, respect others) are presented as highly important in Sufi's life. This is the central phenomenon of Sufism to respect human being in every situation with a belief that this creature of God. This combination of values with beliefs creates resilience in human being to handle the difficult situation. Keeping in view the sensitive nature of work in ICT environment, it creates patience in tough times and creates a peace of mind, which is always helpful to handle difficult situations.

## 4.2 Discussion on Problem 3: Methodology to Explore Spirituality

The third objective of the study was to investigate how to explore the role of spirituality in vocational training of ICT professionals by biographical approach (methodological problem). Therefore, the third problem is what is the methodology of exploring spirituality in vocational training of ICT professionals. Chapter three explains the third objective of the research. The researcher has used manual coding, Wroclaw taxonomy, Nvivo analysis, and rhetorical analysis to explore the spirituality in vocational training of ICT professionals.

In manual coding, the researcher has analyzed the interview contents in detail and has picked up the spiritual dimensions manually keeping in view the biological conception of spirituality proposed by David Hay. After picking up all spiritual dimensions from the contents of the interview, the researcher has established the process of verification and falsification. Independent judges and a panel of judges having the knowledge of spirituality did the verification process. The researcher based on the common feedback of individual and panel of judges deleted all irrelevant and doubted dimensions. A similar process of falsification was done and this process contains an independent panel of judges to falsify the data based on their judgment. Again, all irrelevant and doubted dimensions were deleted by the researcher based on the common feedback of independent panel of judges. After verification and falsification, categories of spirituality were finalized. In each interview, the author is highlighting all manually picked up categories of spirituality. In each highlighted category, reason/criteria to select that category is explicitly written for the sake of clarification. This part of the methodology is helpful to find the first objective of the research i.e. what kind of spiritual dimensions exists in vocational training of ICT professionals.

In Wroclaw taxonomy, the researcher has drawn correlation matrix on the basis of manual coding results. A table that contains the frequency of each category of spirituality for each expert was designed. Correlation method was applied to the frequency table. On the basis of the correlation matrix, Wroclaw taxonomy was designed to keep the structure of the categories and to find the relation between categories. This part of the methodology answers the second objective of the research i.e. what is the linkage between spirituality and vocational training of ICT professionals.

Nvivo 11 computer software is also used to analyze the contents from the interview data. Node and sub-nodes were created based on the criteria based on spiritual categories. Word frequency and cluster analysis show the structure of the spiritual categories, to find the meaning and relation between spiritual categories. This part of the methodology explains different aspects of spiritual dimensions in a more detailed way and highlights the linkage between spirituality and vocational training of ICT professionals.

The researcher described rhetorical analysis procedure in chapter 3 of this thesis. Logos, ethos, and pathos were picked up from the data that contains spiritual dimensions already. A table that contains the frequency of each category of logos, ethos, and pathos for each expert was designed. Correlation method was applied to this frequency table. Based on this correlation matrix, Wroclaw taxonomy was designed to keep the structure of the logos, ethos, and pathos, and to find the meaning and relation between logos, ethos and pathos. The rhetorical results show that discourse reflects a real reality. It means rhetoric is not only discourse, but also this discourse reflect a reality. In rhetorical point of view, spirituality has a rational nature with an inherent emotional component. Spirituality is discourse about values which are involved in emotions. The important perspective is emotions as there is a rare existence of values without emotions. There

is a small link that values involve in rationality which means the values play an existential role. The detailed methodology as discussed in chapter three defined the path that how one can explore the role of spirituality in vocational training of ICT professionals.

In the literature, researchers have used different methodologies to explore spirituality. Most of the researchers like Subramaniam & Panchanatham (2018) and Garg (2018) have explored spirituality quantitatively. Some of the researchers like Andrew (2016) and Labuschagne (2012) have explored spirituality qualitatively. In the current research, author has used narrative and rhetoric as epistemological perspective. The researcher has used four methods to explore the spirituality in vocational training of ICT professionals: manual coding, Wroclaw taxonomy, Nvivo analysis, and rhetorical analysis which describes a unique and comprehensive way to explore spirituality.

### **4.3 Discussion on Problem 4: How Spirituality can enrich the Vocational Training of ICT Professionals**

The fourth objective of the research was to explore the way spirituality can improve the vocational training of ICT professionals. Therefore, the fourth problem is how to enrich the vocational training of ICT professionals by using spirituality. The results of the study show that spirituality exists in vocational training of ICT professionals in all forms of expressions which were specified by David Hay, like awareness sensing, mystery sensing and value sensing. Moreover, the results of the study show how spirituality can enrich the vocational training of ICT professionals.

In **personal life after childhood**, the results of the study show the presence of ‘flow’ with reference to ‘the feeling of performing an activity without reward’. This spiritual indicator is useful to make ICT professionals more humane. It is also analyzed from the results that experts have reported their experiences of ‘wonder and awe’ with reference to ‘sense of connection with universe transcending consciousness’, ‘emotions of reverence and respect’ and ‘the mystery of the sacred’. This indicator of spirituality makes ICT professionals strong in difficult times and provide hope in critical situations because of their connection with higher being. The emotion of respect makes ICT professional more ethical which could be helpful in making the society more humanistic. Moreover, they got motivated to do something difficult because of their belief that the higher being will help them in their difficult times. The results also show the presence of imagination through metaphor that make ICT professionals more innovative which could be helpful in the organization of seminars on science fiction and ICT relevant topics. It could also be helpful in making societies more logical and creative. In **childhood**, the presence of feeling of sorrows and grief make ICT professionals more emotional. This human skill could be useful to create positive societies. Similarly, the presence of ‘ultimate goodness’, and ‘delight and despair’ are really helpful to make a humanistic society. Another spiritual indicator, ‘the experience of concentrated attention’ is helpful to create deep understanding of the analyzed phenomenon in **basic and professional education** life cycle. This skill could be useful to create academic environment more interesting and fruitful.

Moreover, in **professional life** of ICT experts, it is also investigated that ‘here and now’ plays an important role in providing solution of the problems in a critical situation and works as catalyst to spark the idea to find the solution of the problem. This spiritual indicator makes ICT professionals more active in terms of providing solutions in ICT environment. It could be useful to make ICT environment more energetic. The results of the study shows that tuning is helpful

in creating deep understanding of information technology for ICT professionals in their professional life and the person having feeling of tuning is more deeply involved in his work. This spiritual indicator could be beneficial to make ICT organizations more dynamic. Regarding the results related to another spiritual dimension, flow plays an important role to provide courage to face new challenges, provide feeling of satisfaction, and create empathy to others in professional life of ICT experts'. It could be useful to create resilience in ICT professionals that is the key element in ICT environment.

The results revealed that the person who feels 'wonder and awe' is more motivated, more hopeful in difficult situations, more humanistic and more respectful to others in their professional lives. This spiritual indicator of 'imagination' plays a key role to provide creativity and encouragement to ICT professionals to do impossible things in vocational training of ICT professional. The results of the study shows that the person having feeling of 'imagination' is more creative to perform some difficult tasks in professional life. Both these spiritual indicators ('wonder and awe' and 'imagination') could be beneficial for ICT experts to make their work more innovative, which is ultimately required in ICT environment.

The present study finds that the persons who have feelings of 'value sensing' are more purposeful, responsive, and helpful to others. Moreover, they feel more happiness and more patience in tough times, which is ultimately required in ICT environment. It is also analyzed from the results that the feeling of pleasure/excitement is quite dominant in the professional life of ICT professionals and it creates a vital role in the development of the positive ICT environment. The presence of another spiritual indicator, 'ultimate goodness' create patience in tough times and create a peace of mind in professional life of ICT professionals. 'Value sensing' could be supportive in making ICT environment healthier and more humanistic that ultimately positively affects the ICT's training. This healthy atmosphere could be useful to enrich the vocational training of ICT professionals.

The results of the rhetorical analysis shows that spirituality has a rational nature with an inherent emotional component. There is rare existence of beliefs without emotions. Spirituality is not only rational discussion about values but it also involves emotions. Therefore, the practical workshops should be designed in such a way, which involves both rational thinking and emotional element. Some practical exercises can also be undertaken which carry out rational discussion about the role of emotions in reference to values.

## **5 Implications of the Research**

The findings of the study provide theoretical, practical and policy contribution on the spiritual dimensions in the vocational training of ICT professionals. These contributions are as follows.

### **5.1 Theoretical Implications**

The current research contributes to theoretical implications for knowledge enhancement in the field of organizational behavior and human resource management (HRM) specifically in a human capital development perspective. The current studies have highlighted the different perspective of organizational behavior and human resource management but spirituality is neglected for many years. There are minimal studies that have spirituality in HRM perspective specifically in vocational training of ICT professionals. Thus, the current study contributes to the human capital theory by enhancing the scope of spirituality in vocational training of ICT



professionals' perspective. Pandey, Gupta, and Kumar (2016) and Ross et al. (2018) submitted that spiritual climate has the positive impact on learning environment but spirituality in vocational training of ICT professionals is still need to be researched in detail. The current study highlights the importance of spirituality in the vocational training of ICT professionals that was a most neglected area of research in the past.

The current study has implemented the biological conception of spirituality proposed by David Hay on the vocational training of ICT professionals. The biological conception of spirituality was not implemented on the vocational training of ICT professionals earlier which provides a unique way of implementing spirituality in the ICT environment. Moreover, the researcher has highlighted the results in light of Sufism and Monika Kostera's concept of spirituality. This concept of Sufism plays a role of inspiration, specific "light" for enriching researcher's view on his results. Another important perspective of the research is that the author has used a rhetorical approach as a separate epistemology that shows the rhetorical nature of spirituality which was not discussed earlier in the previous literature in the perspective of spirituality in vocational training of ICT professionals.

## 5.2 Practical Implications

The findings of this study can be applied practically in the vocational training perspective of ICT professionals in the ICT environment. It provides ICT's organizations with an understanding of what kind of spiritual dimensions exist in the vocational training of ICT professionals and what is the relationship between spiritual dimensions and vocational training of ICT professionals. Moreover, it can be implied that spiritual dimensions exist in different forms in ICT professionals and may, therefore, ICT's organizations should take care for them and satisfy their spiritual needs. It was set up that people are commonly spiritual, but they do not show strong spiritual values to their organization. Incompatibility among individuals and organizational values may possibly prompt ICT professionals' disappointment with their work, which negatively affects the ICT environment. With the purpose to stay positive in turbulent times, there is a need to address the issue of incompatibility among ICT professionals and their environment.

Spirituality in vocational training of ICT professionals can open the door for ICT organizations to observe the complete study of human behavior in the ICT environment. It offers a new dimension to organizations to understand their employees in a more humanistic way. The study found that 'awareness sensing', 'mystery sensing', and 'value sensing' ultimately influence ICT professionals' learning. It is helpful to discover the purpose of life that makes life more meaningful. It can be proposed that the awareness of spirituality will create organizations that become more humane, responsible and socially active which ultimately affects positively on ICT professionals. Spiritual awareness creates happiness in ICT professionals and they feel more connected with the ICT environment that results in reducing employees' turnover rate in the organization.

Training and development are necessary to survive in the competitive environment (Maheshwari and Vohra, 2018), and it becomes more important in the ICT environment because of the changing nature of requirements. One of the most significant features of spirituality is that it creates the experience of intense concentration that is ultimately required in the vocational training of ICT professionals. Flow is one of the basic elements to create focus in a learning

environment that is sub-dimension of ‘awareness sensing’ in spirituality. It is recommended that ICT organizations ought to invest on ICT professionals by introducing some professional training programs to facilitate spirituality in the ICT environment. Moreover, the awareness to spirituality can also be introduced during the professional education of ICT professionals through organizing conferences, workshops and interactive sessions. The study also provides ICT’s organizations about the rhetorical nature of spirituality that will be helpful in designing the curriculum of vocational training. It is recommended that spirituality is not only rational discussion about values but it also involves emotions. Therefore, the practical workshops should be designed in such a way, which involves both rational thinking and emotional element. Some practical exercises can also be undertaken which carry out rational discussion about the role of emotions in reference to values.

### **5.3 Policy Implications**

Vocational education and training (VET) are fundamental in economic and social policy framework and design worldwide (Tromp, 2018). VET is considerably important while developing the 2020 development strategy in Europe (Deaconu & Mocanu, 2016). Cedefop (2011) in the report of “European Centre for the Development of Vocational Training” mentioned essentiality and implications of VET in European countries whereas Hoffman and Schwartz (2015) reported that VET is core in training the highly skilled labor force in Switzerland and a strong connection between the Swiss education system and VET. Aside from Europe, Dempsey (2013) evidenced that VET is strongly associated with job performance in UK and Australia whereas, in developing countries, Raza and Khalid (2017) have highlighted that Asian economies have given particular attention to VET. The planning and development sector of Pakistan is passing through severe under-skilled personnel and resultantly unemployment increases massive pressure on government to meet capacities and capabilities with the jobs available in the market. Previous literature highlighted the poor government interest, ignorance towards the vocational institutions opening and maintenance, TVET curriculum, higher student dropout ratio, outdated technological and technical infrastructure provisions, inappropriate technical trainers, obstacles in market access and information flow, relevant technology non-familiarity are some hindrances contributory to upscale TVET sector of Pakistan (Raza & Khalid, 2017). Apart from these hindrances, there is also a possibility of missing link of spirituality that should be considered as an important factor in the vocational training. The findings of the study can be beneficial for the Government of Pakistan to revise its National Education Policy (Ministry of Education and Professional Training, 2018) and add spirituality as an important factor towards the development of vocational training.

## **6 Limitations of the Research**

From the vocational training point of view, spirituality is comparatively emerging field for scholars. Firstly, the researcher was not able to explore all the dimensions of spirituality that are of importance in this area of research. Secondly, this study was conducted in one culture, it can be extended to cross-cultural comparison so that the impact of cultures can also be considered while exploring spirituality. Lastly, it is recognized that the study sample is small and focuses on ICT professionals who are working in the society with heavy influence of religion. The essential need to replicate this research on ICT professionals who are working in a secular society.

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## **7 Recommendations of the Study**

The experts of the current research are from homogenous culture. Therefore, it is recommended for future research that the present study can be extended to cross-cultural comparison so that culture can also be considered while exploring spirituality as it may have different meanings in different cultures. The current study has analyzed some dimensions of spirituality in the ICT environment and the experts belong to a religious society. Therefore, the current research can be extended to analyze the further dimensions of spirituality in the learning aspect of ICT professionals. Moreover, current study should be replicated in a non-religious society to check the impact of spirituality in a more precise manner. Furthermore, confirmative empirical research can be conducted to affirm results obtained in the present investigation.

The finding of the study reveals that spirituality in vocational training of ICT professionals has opened the door for ICT organizations to observe the complete study of human behavior in the ICT environment. It offers a new dimension to organizations to understand their employees in a more humanistic way. It is recommended that spirituality should be given importance in the vocational training of ICT professionals and spirituality should be introduced in the training material to enhance the vocational training of ICT professionals. Furthermore, ICT professional should be introduced with spirituality during the period of their professional education through conferences, discussions and workshops.

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