

Relationship between Intellectual Capital and Teachers' Professional Development in Higher Education Institutions

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ARTICLE INFO	ABSTRACT
ARTICLE HISTORY Received: February 07, 2023 Accepted: March 14, 2023 Published: March 30, 2023	The present study explores the role of intellectual capital in teachers’ professional development in higher education institutions in Punjab, Pakistan. The dimensions of intellectual capital comprise social, human, structural and spiritual capital that were explored in relation to professional development. Data were collected from 385 respondents by using a multistage sampling technique. Quantitative data were analyzed by using SPSS. The analysis revealed a strong positive relationship between intellectual capital and teachers’ professional development. Teachers’ intellectual capital comprises knowledge related to intangible assets embedded in an educational institution and relationships with other professionals and stakeholders via teams, groups, and networks to enhance their professional development. The results also showed that teachers spend considerable time over building their social, human, spiritual and structural capitals that aid them in materializing their goals pertaining to the professional development. Teachers with strong social ties and networks tend to have more opportunities at their disposal both in public and private sector institutions.
KEYWORDS <i>Professional Development; Higher Education; Structural Capital; Human Capital; Intellectual Capital; Spiritual Capital</i>	
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INTRODUCTION

The concept of Intellectual Capital (IC) has garnered considerable attention from both academicians and practitioners in the past few decades. The concept is often viewed as a source of knowledge-based equity for an organization. Guthrie and Petty (2000) argued that intellectual capital is a relatively new area of investigation, and it called for a serious academic investigation, the evidence of which can be sorted in the form of growing body of working papers, journal articles, firms' products and services pertaining to IC. A working definition by Organization of Economic Cooperation and Development (Nahapiet & Ghoshal, 1998) defines intellectual capital as an amalgamation of two intangible components of an organization (structural and human capital) contributing to the economic value of an organization. With the changing workplace dynamics, the scope of intellectual capital broadened and now the intangible sources such as social capital and spiritual capital are also viewed as instrumental in furthering the understanding of the concept of intellectual capital as organizations are increasingly becoming knowledge-intensive (Khan, 2014).

This research is based on the intellectual capital theory to view intellectual capital by an amalgamation of human, social, structural and spiritual capital. In order to develop a better understanding of these from a theoretical approach, systems theory appears to be the accurate medium. Systems theory is defined as a theory that focuses in the existing systems and the organization. The theory assumes that the world is made up of interacting components and these set of components are connected together to become a whole (Skyttner, 1996). By approaching intellectual capital through systems theory, the organization is able to recognize its connectedness. Systems theory links the individual to the process and then to the organization. The purpose is to ensure that each person and process is connected to the organization's strategic plans and business goals. If contextualized, individuals working in a system interact with one another to form social relations that often benefit them in professional development (Chua, 2002). People in academia are a part of the system and this interconnectedness paves the way for them to interact and seek opportunities to flourish in their respective disciplines (Kira & Eijnatten, 2008). Thus, it gives a strong lens to view and measure intellectual capital in any sector.

Human capital is defined as the knowledge obtained by an individual that paves a way for value creation in the organization and enhance the individual performance as well. It is often viewed as a main source of creativity and innovation depending upon the skillset and competencies of the employees in the organization (Alnacheh & Alhajjar, 2017). The human capital theory views the employees from the lens of the time spent in service to gauge their job-

relevant knowledge and ability. An individual's job-relevant knowledge, skills, and competencies significantly impact wage, the nature of the job, and avenues for promotion (Becker, 2009).

Structural capital (SC) comprises the knowledge hub existing in the organization in the form of processes, organizational charts, databases, policies, rules and regulations, routines, intellectual property, and manuals (Gogan et al., 2015). For the smooth transmission of knowledge across the organization, a good organizational structure is required to be in place. Therefore, structural capital is incorporated into the ambit of intellectual capital. It comes down to the importance of connecting people with people and people with information through an effective and efficient framework of communication channels (Veltri et al., 2014).

Social Capital (SC) is a multifaceted concept with different implications in different contexts. It is related to the social factors often underestimated or ignored in society with a special focus on individuality, competitiveness and economic priorities (Daykin, et al., 2021). SC comprises the relationship people share with themselves, their neighborhoods and society as a whole (Aldrich & Meyer, 2015).

Spiritual capital is a relatively new concept and is attracting the attention of the academicians. Individuals usually associate certain values from their professional life with their spiritual orientation toward life. The individual and collective capacities generated by a spiritual orientation to life can be termed "spiritual capital". Spiritual capital usually contributes to an individual's commitment to serve and lead the organization (Taghizadeh Yazdi, 2015). Intellectual and social capitals are essential to achieve sustainable development goals (SDGs). By promoting the (SDGs) society can meet education and gender equality (Sharafat et al., 2022). Online teaching during the Covid-19 pandemic reduced the quality of education in Pakistan (Akram et al., 2021) because teachers were reluctant to maintain their leadership abilities (Phuc et al., 2021). However, the study was aimed at finding prevalence of intellectual capital among teachers' serving in the Higher Education Institutions (HEIs) of Pakistan. It was designed to analyze the relationship between intellectual capital and teachers' professional development and it aimed at accessing whether teachers' intellectual capital plays a role in their professional development in higher education institutions?

Intellectual Capital and Teachers' Professional Development

Teachers in academia promote the hope regarding students' future development, which is essential for sustainable development (Aslam et al., 2022). Hope for future development has been considered as a The IC approach can be used in the context of higher education institutions as well since the universities are aimed as the production of knowledge (research), imparting knowledgeable content (teaching) and investing in human resources (Veltri et al., 2014). If viewed in higher education institutions, the universities are working extensively to be autonomous, economically efficient and competitive (Ramírez Córcoles et al., 2011). Furthermore, the universities are adopting organizational models that are consistent with the economy as well as with other social institutions and industrial communities. Intellectual capital has become an important lens to study the effectiveness of teachers and their professional development, strength of teacher networks, and the levels of trust between teachers, administrators and administration (Daly et al., 2014). Teachers' intellectual capital refers to teachers' knowledge-related intangible assets embedded in an educational institution and relationships with other professionals and stakeholders via teams, groups, and networks (within and outside the education sector) that further enhance their practice (Fullan & Hargreaves, 2012). Professional Development within the higher education institutions is perplexing as the faculty tends to associate the concept of learning with the research in the discipline, not teaching or pedagogy (Burth & Marks, 2021).

In the context of higher education, it is often perceived that strong social relations help the teachers' to improve their ranks in the academic sector. At the point when individuals explore the opportunities for further educational development they frequently highlight the requirement for tighter (or looser) instructor choice prerequisites, more or different teachers training, postgraduate educations, additional accreditations, and so on. The literature shows that teachers who have increased access to resources are likely to progress more as compared to others.

Previous literature and Hypothesis development

The subsequent portion deals with the hypotheses of the current study based on Intellectual Capital Theory (ICT), which has been discussed in earlier literature of this research paper. The previous literature established a link between intellectual capital and teachers' professional development in higher education institutions. For example, According to Omona et al., (2010) measurement of intellectual capital would allow the HEIs to understand their core competencies thus allowing them to better utilize their resources that be social, human, structural and spiritual in nature. Based on the above literature, the following hypothesis is proposed:

H1: Intellectual capital has a positive relationship with teachers' professional development

Prior research revealed that intellectual capital plays a very pivotal role in teachers professional development, which may help them in their promotions as intellectual capital has turned into a significant lens to study the effectiveness of teachers and their professional development, strength of teacher networks, and the degree of trust among teachers, administrators and administration (Daly et al., 2014). Similarly, it was also revealed in literature

that teachers' intellectual capital refers to teachers' knowledge-related to intangible assets embedded in an educational institution and associations with different experts and partners by means of groups, gatherings, and organizations (inside and outside the education sector) that further upgrade their practice (Fullan & Hargreaves, 2012). Based on the above literature following hypothesis is set forth:

H2. Social Capital has a positive relationship with teachers' professional development

Linking social capital plays a pivotal role in improving the teachers professional development. The literature over the decades contends that personal interactions focused on instruction can contribute importantly to the professional development of the teachers. These interactions can be in the form of instructions such as workshops, through which teachers and faculty can access the knowledge, information and support from others (McLaughlin & Talbert, 2001). According to Knorringa & Staveren (2007) social capital is the result of meaningful networking from institutionalized relations and understanding between the people or group membership. In education sector, social capital has frequently been alluded to as a component of teacher professional capital, which is a diverse idea containing human, social, and decisional capital (Plagens, 2011). Therefore, based on the above literature, the following hypothesis is formulated:

H3. Human Capital has a positive relationship with teachers' professional development

Human capital plays an important part in teachers' professional development as it includes an individual's job relevant knowledge, skills, competencies that have a significant impact on wage, nature of job and avenues for promotion (Becker, 2009). Human capital is acquired by means of formal education and certification in a specialized area prior entering the profession. However, in academic profession, the journey of acquiring education continues for an educator with professional development becoming a critical part of the learning (Chitpin, 2011).

Although human capital plays a pivotal role in one's professional development but it alone cannot uphold intellectual capital this need to connect people with knowledge creates the incorporation of the second foundational component of intellectual capital: structural capital. By acknowledging the above mentioned studies following hypothesis is formulated for this study:

H4. Structural capital of higher education institutions has a positive influence on teachers' professional development

Structural capital plays a pivotal role to build intellectual capital that's paves a way for teachers professional development. For the smooth transmission of knowledge across the organization, a good organizational structure is required to be in place. Therefore, structural capital is viewed inclusive to the intellectual capital. It functions around getting people on board and connecting them with other people by means of an effective of communication channels (Veltri et al., 2014). The material resources comprising structural capital can be utilized by the employees for their profession development (Pache & Santos, 2013). For instance, technologies, inventions, data publications, and processes in the organizations. Strategy, organizational culture, procedures, rules and regulations also falls in the ambit of structural capital (Asiaei et al., 2022). Structural capital originates from the knowledge an individual possess which is combined with the underlying strategies prevailing within the organization for the sake of efficiency (Bontis, 2001).

H5. Spiritual Capital has a positive relationship with teachers' professional development

Spiritual capital is relatively a new concept and is attracting attention of the academicians. Individuals usually associate certain values from their professional life to their spiritual orientation towards life. Spiritual capital usually contributes to individual's commitment to serve and lead in the organization (Taghizadeh Yazdi, 2015). However, it is asserted that utilization of spiritual capital is linked to the organizational culture. The organizations having a culture that fosters spirituality are more likely to have high level of spiritual capital (Park et al., 2020). For example, spirituality may represent an invisible factor that may lead to the decisions pertaining to the acquisition of wealth and/or the care of people. The relationship of spirituality to moral practices concerns the loyalties that guide decision-making.

RESEARCH METHODOLOGY

Measurement of the variables

The study explored intellectual capital with its four dimensions: social, human, structural and spiritual capital. The structured questionnaire was developed using four tools: The Social Capital items were adapted from the scale of Social Capital Assessment and Learning for Equity (Scale) Measures User Guide (Search Institute, 2021), items measured on a five-point Likert scale. The human and structural capital items were adapted from the scale of structural and human capital by Ramirez et al., (2011), the spiritual capital items were adapted from the scale of Rima (2013) measure of Spiritual Capital and the teachers professional development items were adapted from the scale of OECD Teaching and Learning International Survey (TALIS). The questionnaire comprised of total number of 35 useful items measured on five-point Likert scale.

Sampling procedure

The data was collected from the teaching faculty in public and private sector universities of Lahore, Pakistan, using probability sampling. The multistage sampling was opted to collect responses from the faculty of the universities operating in Lahore (Shimizu, 2014). In the first stage, the city for the purpose of data collection was selected. According to HEC website, total of 59 universities were operating in Punjab, out of which 34 were based in Lahore which makes it the most suitable city for the purpose of data collection. In the second stage, out of the 34 universities, 17 universities were selected by following systematic sampling method by selecting every second university. In the third stage, a sample of 385 was selected by using simple random sampling from the teaching faculty working in these 17 universities.

Data Collection

The data collection process was carried out from March 15th, 2022 to May 31st, 2022. Informed consent was obtained from the respondents before data collection. Structured questionnaires were administered online using Google form for the purpose of data collection. The sample of the study comprised of 385 respondents.

Data Analysis

The data was analysed by using the software named SPSS version 21. Various statistical techniques and procedures including univariate and bivariate were used to analyse the data collected for the study. After analysis, the data were presented in the form of tables. For univariate, descriptive statistics were generated using frequencies and percentages and for the purpose of bivariate, Pearson Correlation was used to test the hypotheses of the study.

RESULTS

Subsequent section deals with the characteristics of the respondents participated in study. The demographic characteristics in the above Table 1 showed the total number of the respondents and their frequencies and percentages in age group, sex, educational status, experience, nature of institute and monthly income according to the range defined.

Table 1: Demographic characteristics of the respondents (N=385)			
Variables	Categories	Frequency (f)	Percentages (%)
Age in years	22-32	140	36.4
	33-43	153	39.7
	44-54	69	17.9
	55-65	18	4.7
	66 and above	5	1.3
Sex	Male	168	43.6
	Female	172	56.4
Educational Status	M.Phil.	191	49.6
	PhD	124	32.2
	Postdoc	57	14.8
	Other	13	3.4
Experience	1-5	142	36.9
	6-10	122	31.7
	11-15	55	14.3
	16-20	46	11.9
	21-25	14	3.6
	25 and above	6	1.6
Nature of Institute	Public	190	49.4
	Private	172	44.7
	Other	23	6.0
Monthly Household Income	50,000-100,000	136	35.3
	100,000-150,000	95	24.7
	150,000-200,000	81	21.0
	200,000 and above	73	19.0

The respondents' age was bifurcated in 5 groups. The Table 1 shows that 36.4% of the respondents lie in the age group of 22-32 years, 39.7% in the age group of 33-43 years, 17.9% in the age group of 44-54 years, 4.7% in the age group of 55-65 years and 1.3% in the age group of 66 and above. It means that majority of the respondents belonged to the age group of 33-43 years. The above table show depicts that out of 385 respondents 43.6% were males and 56.4% were females. The respondents' education was bifurcated in 4 groups. The Table 1 shows that out of 385 respondents 49.6% were M.Phil, 32.2% were PhDs, 14.8% were Postdocs and 3.4% were others such as Masters. The Table 1 shows that out of 385 respondents 36.9% were having experience between 1-5 years, 31.7% were having experience between 6-10 years, 14.3% were having experience between 11-15 years, 11.9% were having experience between 16-20 years, 3.6% were having experience between 21-25 years and 1.6% was having experience between 25 and above. The frequencies and percentages calculated show the nature of institute where

respondents were working. The above table show that out of 385 respondents 49.4% were working in public institutes, 44.7% were working in private institutes and 6.0% were working in other institutes such as semi-government institutes. The Table 1 show that out of 385 respondents 35.3% were having income ranging between 50,000 -100,000, 24.7% were having income ranging from 100,000-150,000, 21.0% were having income ranging from 150,000-200,000 and 19.0% were having income ranging from 200,000 and above.

Bivariate Analysis

Table 2: Pearson Correlation (N = 385)

Variables	Professional Development	Level of Significance
Intellectual Capital	.574**	0.000
Social Capital	.283**	0.000
Human Capital	.498**	0.000
Structural Capital	.472**	0.000
Spiritual Capital	.467**	0.000

The Table 2 depicts the relationship between intellectual capital, social capital, human capital, structural capital and spiritual capital with teachers' professional development. The finding shows that a highly significant relationship between intellectual capital, social capital, human capital, structural capital, spiritual capital and teachers professional development as the significance value is less than 0.01 ($P < 0.01$) which is .000 indicating a highly significant relationship.

The value of Pearson correlation of intellectual capital is .574 and the significance value is .000 which indicates a highly positive relationship between intellectual capital and teacher's professional development. The value of Pearson correlation of social capital is .283 and the significance value is .000 which indicates a highly positive relationship between social capital and teacher's professional development. The value of Pearson correlation of human capital is .498 and the significance value is .000 which indicates a highly positive relationship between human capital and teacher's professional development. The value of Pearson correlation of structural capital is .472 and the significance value is .000 which indicates a highly positive relationship between structural capital and teacher's professional development. The value of Pearson correlation of spiritual capital is .467 and the significance value is .000 which indicates a highly positive relationship between spiritual capital and teacher's professional development. It is asserted from the results that intellectual, social, human, structural and spiritual capitals are positively correlated and a strong association exists between these all variables.

DISCUSSION

This study embarked upon to probe into the contribution of intellectual capital in teachers' professional development in the context of higher education institutions in Lahore, Pakistan. All five of the hypotheses show a positive relationship between independent and dependent variables.

Hypothesis (H1) revealed a strongly positive relationship between intellectual capital (IC) and teachers professional development as confirmed by Pearson Correlation. The dimensions of IC were comprised of social, human, structural and spiritual capital the impact of which was gauged at the professional development. In academia, people invest on building their intellectual capital to climb up the career ladder. Since universities are the organizations that invest in teaching, human resource, and research with an objective to produce and disseminate knowledge among the people. Being the organizations responsible for the creation and spreading knowledge, HEIs have been adopting an entrepreneurial role, involving networking and international collaboration (Pedro et al., 2020). Intellectual capital is viewed as an important lens to analyze the effectiveness of teachers and their professional development, examine the strength of their networks, and the levels of trust between teachers and teachers and administrators and administration (Daly et al., 2014). Teachers' intellectual capital refers to teachers' knowledge-related intangible assets existing in an educational institution and relationships with other professionals and stake holders that further enhance their practice (Fullan & Hargreaves, 2012). As the results revealed that majority of the teachers confirmed that their institutions facilitate them in developing expertise in their respective fields and provide them with the conducive environment required for professional excellence.

Hypothesis (H2) is concerned, the Pearson correlation also confirmed that a highly positive relationship between social capital and teachers' professional development and both are highly correlated. Social capital is the knowledge fostered through the interactions occurred between individuals among their network in the same field of study (Subramaniam & Youndt, 2005). In academia, social capital delves into exploring the source from which instructors acquire knowledge. If viewed in the context of HEIs, teachers often reach out to their colleagues, peers or heads, the evidence of which is revealed through the results of the study. Social capital in the context of education sector refers to the potential use of social relationships positively to ensure demands on those who are in power for the allocation of services, resources and support (Campbell-Phillips, 2020). The literature contends that personal interactions contribute significantly to the professional development of the teachers. The results revealed that most

of the teachers agreed to the existence of strong and influential people in their network that are helpful in tapping opportunities for professional development.

Hypothesis (H3) revealed a strong positive relationship between human capital and teachers' professional capital confirmed by descriptive statistics and Pearson Correlation. Knowledge is instrumental for the development of human capital in any organization. The importance of having well-trained teaching faculty has been stressed in policies all around the world. The human capital of educators acts as a cornerstone not only for a strong education system but also for the professional development of the teachers (Daly et al., 2021). The results revealed that most of the teachers in HEIs agreed that they had a clear sense of their career they are pursuing. Moreover, most of the teachers' agreed that they spend a considerable amount of time in teaching and research training and for the development of research capabilities. The focus in HEIs is primarily more on research than teaching pedagogy. As evidenced from the literature, as compared to school teaching, teaching in HEIs is not generally focused on identifying and learning teaching methodologies and pedagogies. Faculty is often experts in their domain and specialization but lag behind in teaching background (Shukla & Dungsungnoen, 2016). Thus, the human capital of teachers in HEIs is usually based on expertise one have in the area of specialization rather than pedagogy.

Hypothesis (H4) revealed a strong positive relationship between structural capital and teachers' professional development exists as confirmed by both descriptive statistics and Pearson Correlation. The results revealed that teachers agreed that their institution puts efforts on organizing scientific, cultural and social events. Furthermore, the institutes put efforts for efficient management of research projects and research incentives for the teachers. If viewed in the context of higher education institutions, structural capital comprises the infrastructure and the resources provided to the university. Structural capital originates from the knowledge an individual possess which is combined with the underlying strategies prevailing within the organization for the sake of efficiency (Bontis, 2001). Creation of such forums acts as a basis for the provision of conducive learning environment to the teachers as well as a platform to seek advice from the colleagues. Offering research opportunities and conducive environment to its employees to further their professional development, universities are trying hard thus emphasizing on entrepreneurial university setup (Hakala, 2009). To gain knowledge and practice, academicians need access to community forums for the purpose of professional development.

Hypothesis (H5) revealed a positive association between spiritual capital and teachers' professional development as confirmed by descriptive statistics and Pearson Correlation. The results revealed that most of the teachers agreed that their spiritual beliefs guides their way of doing certain things, contending that spiritual orientation influence the professional development. In the professional domain, spirituality often influences the way one adopt approach towards their work requirements. Spirituality often results in fairness in work and moral uplifting the social fabric of the society. Professionally, spirituality may influence the work ethics of a person (Chenot & Kim, 2017). The structure of spirituality is based on the values like trust, integrity and beliefs of human beings. These factors lead to the formation of the spiritual influence. It is asserted that the spiritual capital in the organization leads to the improved employee performance and develops organizational citizenship behaviour (Collins, 2010).

Conclusion

Intellectual capital is viewed as an important source to study the teachers' effectiveness and their professional development. The dimensions that accounts for intellectual capital are social, human, structural and spiritual capital. Social capital focuses on the strength teachers have pertaining to the network and community they share. The results revealed a strong relationship between social capital and professional development asserting that meaningful interactions between the teaching fraternity helps teachers in exploring potential opportunities that paves a way for their professional development. Furthermore, as far as human capital is concerned, the results revealed that strong human capital leads to more professional development. Teachers are constantly engaged in building up their research capabilities and up-gradation of their academic qualification thus seeking their professional development.

Apart from social and human capital, the study revealed that good structural capital also supports professional development. The institutions with good infrastructure and conducive environment for the faculty facilitates in professional development of teachers in HEIs. Personal beliefs and moral values also play a pivotal role in one's professional life as confirmed by the strong association between spiritual capital and professional development. A person with good moral values and honest opinions results in increased job satisfaction and professional development. However, there is a lot of room for improvement and there is a need to undertake more research in this area to bring positive changes in the education sector of Pakistan.

Implications

This research has various implications. The findings of the current study can be used by the private and public sector universities in order to revisit their policy pertaining to promotions and be more inclusive about the strategies pertaining to teachers' professional development. The use of proper key terms for teachers training and carrying out career management and career development workshops in the policy manuals would be helpful in

developing teachers understand and knowledge about these practices. Furthermore, career development should be made a part of teachers training in order to improve the teachers' performance and equip them to handle the problems in our education sector. Moreover, research can be conducted in this area by the inclusion of elementary and secondary schools as well in order to get a comparison of perception of teachers in public and private elementary schools. It would be illuminating to have more research in this area in the context of Pakistan in order to improve the contribution of the education sector of Pakistan.

Limitations

This study has been undertaken by using multistage sampling for teaching faculty working in Higher Education Institutions of Lahore. The HEIs in Lahore were selected considering the easy access to the faculty and the time constraints. The results of the study are restricted on the basis of HEIs and are applicable in the context of HEIs only. Moreover, research can be conducted in this area by the inclusion of elementary and secondary schools as well in order to get a comparison of perception of teachers in public and private elementary schools. It would be illuminating to have more research in this area in the context of Pakistan in order to improve the performance of the education sector of Pakistan.

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