FORMING COMMUNITIES OF PRACTICE IN HIGHER EDUCATION: A COMPARATIVE ANALYSIS

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ABSTRACT

In the light of the development of the educational process, a by this the overall system, there occurs the permanent need for its advancement. Through the realization of that aim it will be contributed to the development of the contemporary society – both regional as well as global. The quality educational process also means the achievement of quality, applicable knowledge, which is said to be power. With the thought of Francis Bacon "Knowledge is power" begins the project of the modern. René Descartes joined him as the leader of the modern with his rationalistic stance "I think, therefore I am") which opens presumptions for the later period of the postmodern. In the new times, by applying concretization of independent constructivism, creativity, independency and working on oneself, various pedagogical models open spaces to human thinking and creation and also to interactive relations indispensable for the development of pedagogical thought and work. Then we talk about the postmodern. Readiness for quality processes can be seen in the context of formatting social competences (within the social terms), which includes educational, human potentials, strategies and structures of developing politic. What do they incline to? They aspire to the realization of the system of excellence in all fields and all levels of education. The formatting of the overall ***system of excellence*** must be accompanied quality and creative processes of managing and regulation.

KEYWORDS: communities of practice, higher education, action research, knowledge sharing, online learning, survey.

1. INTRODUCTION

Communities of Practice (CoPs) are all around us. It has been in existence for a long time. Communities can be found in schools, universities, research institutes (Nistor, Baltes, & Schustek, 2012) and business organisations. Gannon-Leary and Fontainha (2007) emphasise that in view of technological developments which gave rise to improved communication and participant interactivity, academic staff and learners (students) in higher education have been functioning in virtual Communities of Practice (VCoPs). These online environments allow participants to communicate synchronously or asynchronously (Baran, 2006). According to Bolger (cited by Gormley 2012) VCoPs can advance employee development and learning while preserving crucial organisational knowledge. However, the specific guidance to form CoPs in higher educational institutions (HEIs) does not exist.

On the other hand, Nistor et al. (2012) point out that although VCoPs lead to improved academic participation and learning success, only a small number of learners and faculty participate in VCoPs on a regular basis. Participation in CoPs delivers several benefits in the form of the accumulation of experience, the stimulation of the social construction of knowledge and the development of expertise (Boylan, 2010; Nistor, Baltes, & Schustek, 2012), which makes it interesting for educational research on formal learning.

Given that knowledge as a valuable asset must be managed in a knowledge-based economy and most organizational knowledge exists in tacit form within employees' minds (Gromley, 2012), issues of knowledge management have also become more prevalent among researchers. Krishnaveni and Sujath (2012) emphasise that knowledge sharing in CoPs have not been entirely researched so far.

It is noteworthy that research on the environments of online CoPs has increased (Baran, 2006). Some remaining questions still need to be answered. To establish CoPs and keep it alive is more difficult than the blink of an eye. Unfortunately, the majority of literature on CoPs originates from outside Europe although e-learning articles have been widely distributed around Europe. Gannon-Leary and Fontainha (2007) advocate further research on CoPs and virtual learning communities across European Union countries. Similarly Petersen (2007) cited by Gannon-Leary and Fontainha (2007) proposed that the concepts of learning in CoPs need to be further developed. Overall, more research is required about CoPs (Baran, 2006; Wubbels, 2007) to gain more insight about it.

This study has been initiated as part of a Women in Research project about CoPs that consists of six phases: developing a theoretical framework for communities of practice; exploring students' preliminary attitudes towards communities of practice; forming pilot communities of practice; evaluating pilot communities of practice groups; implementing action research to pilot communities of practice and applying the communities of practice model (CoPM) to other groups.

The aim of this paper is to highlight phase two of the study namely exploring students' preliminary attitudes towards communities of practice. The main purpose of this paper to determine to what extent are learners willing or prepared to share knowledge within learning CoPs at three institutions of higher education in order to empower learning and knowledge sharing within those institutions. The University of Johannesburg in South Africa, the University of Witwatersrand and the University of Zadar in Croatia are compared in this paper. All of them are urban universities which offer contact tuition. Furthermore, Croatia joined the European Union on 1 July 2013 (Mahony, 2013).

The research questions are the following:

1. What are the perceptions of undergraduate and postgraduate students at two South African universities about CoPs in terms of their willingness to share knowledge and experiences?
2. What are the perceptions of undergraduate and postgraduate students at a European university about CoPs in terms of their willingness to share knowledge and experiences?
3. In which way does CoP influence the study methods of undergraduate and postgraduate students at all universities?

2. DEFINING COMMUNITIES OF PRACTICE

Wenger and Snyder (2000: 139) define CoPs as "groups of people informally bound together by shared expertise and passion for a joint enterprise". Lave and Wenger (1991) and Wenger (1998) view CoPs as groups of people who share "goals, activities and experiences in the frame of a given practice". Barab, Makinster and Scheckler (2004) regard a CoP as a "persistent, sustained social network of individuals who share and develop an overlapping knowledge base, set of beliefs, values, history, and experience focused on a common practice and/or mutual enterprise". The improvement of knowledge of the members in the community is the result of the communication.

Online CoPs differ from co-located CoPs. Gannon-Leary and Fontainha (2007) describe virtual communities of practice (VCoPs) as a "network of individuals who share a domain of interest about which they communicate online". Lai, Pratt Anderson and Stigter (2006) point out some differences. It takes longer to develop online CoPs than co-located CoPs. Technological support is crucial for online CoPs but not for co-located CoPs. Communication in online CoPs is mainly computer-mediated but in co-located CoPs communication is mainly face-to-face.

3. PARTICIPATION, TRUST AND KNOWLEDGE SHARING WITHIN COPs

Wenger (1998) focuses on participation as an "encompassing process of being active participants in the practices of social communities and constructing identities in relation to these communities". Interactions do not have to be long (Krishnaveni & Sujatha, 2012). Knowledge sharing occurs via reflection and story telling and CoP members communicate among themselves. CoPs ultimately serve as a platform to question and explore the topics of interest. In order to learn through social interactions, the members produce and reuse resources e.g. the artefacts and its memory. The resources support the tacit knowledge of CoP members and those members share their knowledge and competencies.

To communicate with others in a community, creates a social presence. The social presence influences the likelihood of individuals to participate in CoPs, especially in online environments. The degree of participation in CoPs differs depending on the individual expertise of the members. Those who display more expertise become involved in more activities which include activities with a higher degree of difficulty and responsibility.

In CoPs the expert status relates to the identity of the members in that community. Members can be full and peripheral community members according to Lave and Wenger (1991). Experts with their exceptional knowledge and skills are full members of CoPs and members recognise them socially as such. It follows then that expert identity results from "the interaction with and recognition of other members" in CoPs which takes place in the context of participation. The impact of "expertise participation on expert status is mediated by participation" (Nistor et al., 2012).

Furthermore, Krishnaveni and Sujatha (2012) report that members address issues with the assistance of other experts within the CoPs. Gradually mentors come to the forefront in view of their long-term association and they start to assist newcomers. It is easy for new members to join if they have the particular interest. In passing of time they associate with senior members and more experts which opens the way for transfer of knowledge from the experts to the learners. After a while the members know which part of the knowledge can be codified and which part must be shared by means of storytelling or other means (Krishnaveni & Sujatha, 2012).

The Oxford English Dictionary (2013) describes trust as a 'firm belief in the reliability, truth, or ability of someone or something'. Members will use CoPs once they trust it to have reliable and objective information. For CoPs to be successful, the members must highly trust the integrity and competence of its members (Krishnaveni & Sujatha, 2012). If the community includes a number of known people, the CoP members will feel more comfortable, but they will also be inclined to participate in CoPs consisting of entirely new members if they have great levels of trust in the institution.

Usoro, Sharratt, Tsui and Shekhar (2007) conclude that trust in VCoPs contains three elements: competence, integrity and benevolence. Usoro et al. (2007) found trust in the integrity of the community to be the most important predictor to share knowledge. Competence-based trust refers to the confidence of the members in the particular expertise of others. Integrity/benevolence-based trust involves the expectation of the trustees that others will treat them in an honest and kind manner. Ardichvili (2008) cited by Gormley (2012) further added institution-based trust, which refers to moderators who ensure the trustworthy behaviour of members through organisational structures. In an earlier study, Ardichvili (2003) identified integrity/benevolence-based trust and competence-based trust as important barriers to participation in VCoPs, due to the fear of misuse by others of information posted, for example, facing a personal attack by others. Often members of CoPs come across several barriers that hinder them to participate and exchange knowledge.

4. APPROPRIATE TECHNOLOGY FOR COPs

Internet technologies enabled knowledge sharing in online CoPs. Active knowledge sharing contributes to successful VCoPs. Expert knowledge can be shared by the medium of Web 2.0 tools which include blogs and wikis. Web 1.0 and Web 2.0 deal with the ways in which technologies are used. Web 1.0 consisted of static web pages that were filled with information but users could not interact with the site except for example to download a document or an application.

Web 2.0 enabled people to connect with others through the Web by using for example social networking sites like LinkedIn or Facebook (Gelin & Milusheva, 2011). It allows communication, participation, collaboration and editing of information (Gormley, 2012). Users can contribute (e.g. Wikipedia) or share content (e.g. YouTube). If anybody wanted to create CoPs, Web 2.0 would be the technology to apply. However, Web 2.0 is beneficial if members continue to use the community for knowledge sharing. Web 2.0 tools ought to decrease the time users spend to source content by improving the visibility of existing content instead of being used to offer an alternative to what exists already.

On the other hand, VCoPs is able to operate successfully without the latest high-tech tools (Gelin & Milusheva, 2011). Learners may require training to use social media or to participate in blogs, wikis and forums for knowledge sharing. They need to obtain the relevant skills and competence to use them.

Davis (1989) cited by Gormley (2012) postulates that the perceived usefulness and perceived ease of use of technology influence substantially on the users' motivation to accept and use information technology. For instance Karpinski (2008) cited by Gormley (2012) reported that people may not use Web 2.0 resources if they did not have a perceived need for the resource, thereby not viewing it as useful. Interestingly, technology itself may add to the misinterpretation of messages, due to lack of face-to-face communication (Gannon-Leary & Fontainha, 2007; Gormley 2012). Management must play a supportive role to promoting the usefulness and advantages of Web 2.0 tools for knowledge-sharing and collaboration and make the technology available to employees.

5. CULTIVATING COPS WITHIN ORGANISATIONS

For Wenger, McDermott and Snyder (2002) a successful CoP relies on the purpose and objective of the community as well as the interests and resources of the CoP members. Instead of reinventing the wheel and starting from scratch, Schenkel and Teigland (2008) as cited by Krishnaveni and Sujatha (2012) advise that one should look at the existing communities and networks first. In the absence of the latter, the recommendation is to form relationships among co-workers around common themes and interests followed by developing goals for CoPs in alignment with organisational objectives. In a strongly framed CoP, transmission of knowledge takes place closely between the members thereof. The opposite is true. When transmission of knowledge is less frequent, the CoP is weakly framed. The danger of disintegration occurs when the ability to communicate closely among the CoP members, is hindered (Schenkel and Teigland, 2008 cited by Krishnaveni and Sujatha, 2012).

Top management ought to have an awareness of networks of knowledge workers and the importance of knowledge sharing. CoPs flourish when they receive active support and the necessary resources e.g. time to participate, technical infrastructure, CoP sponsors ensure the whole support for the development and expansion of CoPs. CoP sponsors serve as a support link between CoP leaders and top management. The sponsor can further play the role of a control agent and request the CoP leader to provide a number of best practices to be developed at specific time intervals. Sponsors should supervise the best proactive adoption process and provide appropriate technology to enable best practice exchange within the CoP (Borzillo, 2009 as cited by Krishnaveni and Sujatha, 2012).

Successful CoPs are able to generate sufficient excitement, relevance and value to attract and engage members, a sense of aliveness in other words. How can one design CoPs for this aliveness? Wenger, McDermott and Snyder (2002) postulate that CoPs must invite the interaction that makes them alive. Well-structured CoPs enable group discussion, one-on-one conversations, observing experts tackle cutting-edge issues. Despite the voluntary nature of CoPs, well-structured community design can invite aliveness. Wenger, McDermott and Snyder (2002) identified seven principles or actions in order to cultivate CoPs so that they will become "alive":

1. *Design CoPs to evolve naturally.* Since CoPs are dynamic, in the sense that the interests, goals and members may change, CoP forums need to be designed to support these shifts in focus.
2. *Create opportunities for open dialogue between inside and outside perspectives.* Although the CoP members and their knowledge are a valuable resource, it is to the advantage of the CoPs to look outside of the CoPs to gain understanding and insight in the different possibilities to accomplish their learning goals.
3. *Invite different levels of participation.* The first level is the core group that participates intensively in the community through discussions and projects. They fulfill leadership roles to guide the group. The active group, second level of participation, participate regularly but not to the same extent as the level of the leaders. The third level, the peripheral group, although being passive members in the community are still learning from their involvement. The majority members resort to this third group.
4. *Develop public and private community spaces.* CoP members in public spaces share and discuss ideas but private exchanges must be made possible. Different CoP members could coordinate relationships among the members and resources by adopting an individualised approach based on particular needs.
5. *Focus on the value of the community.* Members ought to have opportunities to discuss the value and productivity of their participation.
6. *Combine familiarity and excitement.* As part of the CoP structure learning opportunities must be provided to shape their learning experiences in a brainstorming session and investigating the traditional and radical wisdom with regard to their topic.
7. *Create a rhythm or pace for the community.* Members need to meet, reflect and evolve on a regular basis. The pace should maintain an engagement level that will sustain the vibrant CoP but at the same time not become so fast-paced that it becomes unwieldy and overwhelming.

5.1 Principles for cultivating CoPs

Lai et al. (2006) argue that online CoPs or VCoPs involve more than merely transferring a CoP to an online environment. Technology infrastructures must enable the online CoPs to address barriers that are not applicable in co-located CoPs: time to meet and communicate; members may be large and involve many locations; members are dispersed across organisations and experience different organisational cultures. It is debatable whether trust can be developed online. Lai et al. (2006) provide the following design principles for online CoPs:

1. *Online CoPs must be cultivated to grow naturally*. Although these online CoPs "can be built in terms of the technology", the members themselves must take rersponsibility to grow the community. Online CoPs must allow development.
2. *Developing online CoPs by considering sociability (interaction of members) and usability (interaction of members with the technology).* Several strategies are provided to promote sociability and participation. Allow different levels of participation; allow time to participate; ensure that there is ease of use of technologies and build social relationships and trust.
3. *Attract diverse members so that a critical mass of people are members of the online CoPs*. Structure the online CoPs to take into account geographical and contextual diversity.
4. *Provide for different roles in the online CoPs.* The types of roles are: leadership roles, core members, support persons and community members. Defined roles deliver the benefits of reassurance, continuity and structure.
5. *Incorporate technology designed with functionality to support sociability and knowledge sharing.* To choose appropriate technology, the following must be considered: the needs of the community, access; level to technology and the level of available funds.
6. *Adopt a blended approach to development where online activities are supported by offline activities.*

5.2 Strategies for empowering CoPs

Au, Reiner and Urbanowski (2009) suggest five additional strategies that can be applied in CoPs:

1. *Create an equal environment*. Members must be at ease to participate and intimidation should be discouraged. To develop a common understanding of the value of the community requires intensive preparation. All members must be engaged and they need to find a way to work together to accomplish goals together.
2. *Keep material and activities engaging*. In order to prevent boredom, excitement can be created by examining or discussing different activities that everyone will

be interested which will motivate members to return for more. Wenger et al. (2002) concurs that successful CoPs supply sufficient structured activities to build a pace of participation and opportunities to share innovative ideas.

3. *Establish a routine*. Members of CoPs need to know what will be accomplished during each meeting and when. Since all participants have different schedules for all their commitments, a routine is necessary so that members can work around their commitments (Au, Reiner & Urbanowski, 2009; Wenger et al., 2002).
4. *Support third party opinions*. Apart from professional opinions, third party opinions of people who do not form part of the practice serve as a neutral opinion on what the CoP is looking for, what is lacking, what has been overdone or tried previously. For Wenger et al. (2002) insider and outsider perspectives are necessary. While insiders understand the issues and barriers to problem-solving and may possess the knowledge required to assist the CoP, outsiders who are non-experts and neutral facilitators on the issue may help open up new possibilities.
5. *Design for growth and expansion.* With the passing of time, new information, new ideas and techniques could be incorporated. Changes in the organisation also place new demands on the CoP and the community must prepare for the growth and expansion.
6. *Adhering to the preceding will contribute to CoPs being successful*. The next section deals with the empirical part of the study.

6. RESEARCH DESIGN

6.1 Research approach

This research can be described as a quantitative case study as the learning experience of students is investigated relating to a specific event in a bounded context (Creswell, 1994; Yin, 1994; Merriam, 1998). The quantitative research approach allows researchers to collect quantifiable data in challenge to deliver neutral results (Creswell, 1998).

6.2 Sampling and data gathering method

A non-probability sampling approach was used through convenience sampling. Participants from the three groups of students (Department of Economics, University of Zadar, Croatia, Department of Mining, University of the Witwatersrand and Department of Applied Information Systems, University of Johannesburg) presented a purposive convenient sample, as they were available and inexpensive to this study (Patton, 1980:104).
A survey was undertaken with 500 students registered for undergraduate and postgraduate diplomas and degrees at three Universities. Lectures conducted an off-line questionnaire using existing database of undergraduate and postgraduate students at three universities.

6.3 Assessment of trustworthiness

Participation was strictly voluntary and students were free to decline to participate in this research study, or they could withdraw their participation from the study at any time. Students were informed that anonymity will be protected in any reports, research papers, thesis documents, and presentations that result from this work.
The students completed a questionnaire, which they returned to the researchers electronically. The issues of credibility and reliability in the questionnaire design were considered (Creswell, 1994,1998; Patton, 1980).

6.4 Questionnaire design

The questionnaire was divided into sections A - demographic information (gender, age, year of study, nationality) and B - 5 categories/measures, namely: willingness; team preparedness; communication modes; and perceived benefits. In total the questionnaire consisted of 20 questions and the variety of questions contributed to the richness of the preliminary data by revealing students' perceptions, opinions with respect to CoPs.

7. DATA ANALYSIS

7.1 Cross-tabulation and Chi-Square testing

Inferential statistics (a cross-tabulation and Chi-Square testing) were used to analyse students' responses that are considered as variables. A cross-tabulation is a technique that is based on joint frequency distribution of cases based on two or more categorical variables. Categorical variables should contain integer value, which would indicate membership in one of several possible categories. The range of potential values for such variables is limited. Due to the low number of possible values of categorical variables it is not possible to make any assumptions regarding the distribution (e.g. whether it is normal distribution) (Crossman, 2013).

Chi-Square test can be utilized in this study to investigate whether the results of the sample analysis are representative of the larger population (Crossman, 2013).

The Chi-Square test of statistical significance assumes that the variables are measured at the nominal level. This means that should there be any information regarding the order of, or distances between categories, it is ignored. A critical assumption for the Chi-Square is independence of observations. Moreover large frequencies are expected (Michael, 2002). The Chi-Square test helps us to determine whether two discrete (categorical) variables are associated.

The Chi-Square test computes the sum of the squares of the differences between actual and expected values of variables and assigns a probability value to that number depending on the size of the difference and the number of rows and columns of the crosstabs table. If the probability value p computed by the Chi-Square test is very small it means that the differences between actual and expected values are significantly large. This means that the assumption of the independence between variables is not met and that there is a relationship between the variables. Should the value p be large, differences between the actual and expected values are not statistically significant and therefore variables are indeed independent. The Chi-Square test is only reliable if all expected values are 5 or more. Figure 1 presents the results of the cross-tab and Chi-Square analysis for the variable measuring the willingness to share knowledge in the same field.

Figure 1: Willingness to share knowledge in the same field (Cross-tab and Chi-Square test).

Cross- tab

			Institution			Total
			Zadar	UJ	Wits	
5.1 Are you prepared to share your knowledge and experience with others in the same field?	Strongly Disagree	Count	1	3	3	7
		% within Institution	0.5%	2.6%	1.3%	1.3%
	Disagree	Count	1	0	0	1
		% within Institution	0.5%	0.0%	0.0%	0.2%
	Neutral	Count	12	19	13	44
		% within Institution	6.0%	16.4%	5.6%	8.0%
	Agree	Count	130	50	60	240
		% within Institution	65.0%	43.1%	26.0%	43.9%
	Strongly Agree	Count	56	44	155	255
		% within Institution	28.0%	37.9%	67.1%	46.6%
Total		Count	200	116	231	547
		% within Institution	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	91.732[a]	8	.000
Likelihood Ratio	90.299	8	.000
Linear-by-Linear Association	29.318	1	.000
N of Valid Cases	547		

a: 6 cells (40.0%) have expected count less than 5. The minimum expected count is .21.

In this case there are 6 cells (about 40%) that have the expected count below 5, which makes the Chi-Square test not reliable.Figure 2 presents the results of the cross-tab and Chi-Square analysis for the variable measuring the willingness to share knowledge depending on the character or the other members of CoP.

Figure 2: Willingness to share knowledge depending on the character of the other members of CoP.

Cross- tab

			Institution			Total
			Zadar	UJ	Wits	
5.2 Would the character of the other members play a role while sharing knowledge?	Strongly Disagree	Count	0	1	4	5
		% within Institution	0.0%	0.9%	1.7%	0.9%
	Disagree	Count	1	1	6	8
		% within Institution	0.5%	0.9%	2.6%	1.5%
	Neutral	Count	29	24	36	89
		% within Institution	14.5%	20.7%	15.7%	16.3%
	Agree	Count	115	57	92	264
		% within Institution	57.5%	49.1%	40.2%	48.4%
	Strongly Agree	Count	55	33	91	179
		% within Institution	27.5%	28.4%	39.7%	32.8%
Total		Count	200	116	229	545
		% within Institution	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.371[a]	8	.006
Likelihood Ratio	22.782	8	.004
Linear-by-Linear Association	.056	1	.813
N of Valid Cases	545		

a: 6 cells (40.0%) have expected count less than 5. The minimum expected count is 1.06.

As with the data in Figure 1, there are 6 cells, which have the expected count below 5, which makes the Chi-Square invalid in this case. Similar situation to those two presented previously (cells with values below 5) occurs in the case of the following questions in the questionnaire:

1. Are you a team player?
2. Which form of communication would you most use as a participant in a CoP?
3. By sharing knowledge, my knowledge base will increase
4. Sharing my personal knowledge and experiences will maintain or increase my status amongst my peer
5. Sharing my personal knowledge and experiences helps build trust among peers study methods are unique and effective like to share them with others
6. We all possess certain tacit knowledge. Sharing with others will make us more effective
7. I will learn more from peers about new developments in my field than from reading literature benefit from knowledge sharing
8. My peers benefits from knowledge sharing
9. Associating voluntarily with others to share knowledge, friendships can develop based on trust
10. Since voluntary, I can opt out any time
11. Sharing the same identity creates a strong bond amongst the members of a CoP
12. CoPs are created out of passion for one's work and they 'die' from lack of it
13. Sharing my personal knowledge and experiences will not be detrimental to my own performance (e.g. detracts from doing other work)
14. I have personal knowledge and experiences that would be important for my peers to have
15. Sharing my personal knowledge and experiences will increase my power to influence decisions

Therefore for these questions the analysis based on the Chi-Square test would yield unreliable results. In the case of these variables it is advisable to gather more data or re-investigate the scales utilized.There are only two questions in the questionnaire that meet the criterion of having all of the expected frequencies above 5:

16. Do you prefer to work alone?
17. I am frustrated with my studies and would like to feel free to discuss it with others.

In the case of these questions it is possible to proceed with the Chi-Square test as the results of it are likely to be reliable. Table 3 presents the Cross-tab and Chi-Square for the first questions, while table 4 presents the Cross-tab and Chi-Square for the second variable.

Figure 3: Preference of working alone.

Cross- tab

			Institution			Total
			Zadar	UJ	Wits	
5.4 Do you prefer to work alone?	Strongly Disagree	Count	15	16	47	78
		% within Institution	7.5%	13.8%	20.3%	14.3%
	Disagree	Count	68	29	60	157
		% within Institution	34.0%	25.0%	26.0%	28.7%
	Neutral	Count	64	40	82	186
		% within Institution	32.0%	34.5%	35.5%	34.0%
	Agree	Count	46	16	27	89
		% within Institution	23.0%	13.8%	11.7%	16.3%
	Strongly Agree	Count	7	15	15	37
		% within Institution	3.5%	12.9%	6.5%	6.8%
Total		Count	200	116	231	547
		% within Institution	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.615[a]	8	.000
Likelihood Ratio	34.203	8	.000
Linear-by-Linear Association	4.879	1	.027
N of Valid Cases	547		

a: 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.85.

Figure 4: Frustration and willingness to share it

Cross- tab

			Institution			Total
			Zadar	UJ	Wits	
7.5 I am frustrated with my studies amd would like to feel free to discuss it with others	Strongly Disagree	Count	16	11	22	49
		% within Institution	8.0%	9.6%	9.6%	9.0%
	Disagree	Count	68	20	45	133
		% within Institution	34.0%	17.4%	19.7%	24.4%
	Neutral	Count	68	31	58	157
		% within Institution	34.0%	27.0%	25.3%	28.9%
	Agree	Count	45	41	65	151
		% within Institution	22.5%	35.7%	28.4%	27.8%
	Strongly Agree	Count	3	12	39	54
		% within Institution	1.5%	10.4%	17.0%	9.9%
Total		Count	200	115	229	544
		% within Institution	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.869[a]	8	.000
Likelihood Ratio	51.336	8	.000
Linear-by-Linear Association	18.845	1	.000
N of Valid Cases	544		

a: 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.36.

The values of *p* are quite high therefore it is possible to conclude with high certainty that there is no relationship between the values for these variables and the institution the study was conducted with. In other words the institution was not affecting the answers of the respondents. Although this is only a preliminary study it is possible to formulate the potential hypotheses that could be further investigated during the full empirical research with the participating institutions.

H_0: There is no statistically significant difference in how the Communities of Practice are utilized in the participating institutions.
H_1: There is a statistically significant difference in how the Communities of Practice are utilized in the participating institutions.

At this point it is however difficult to evaluate, which one of these hypotheses would be valid. Given that only two of the variables (as compared with fifteen that did not meet the Chi-Square criteria) could be utilized to investigate the hypotheses presented. Based on the preliminary study data it is possible to state that the result of the analysis of the two variables supports the null hypothesis – that there is no statistically significant difference in how the CoPs are utilized in the participating institutions. This statement is not a strong statement however. It is necessary to remember that these two variables were measuring only two aspects (and not the most important ones) of the CoPs. It is recommended that this study with improved questionnaire questions is conducted with a larger group of potential respondents.

8. DISCUSSION

This paper investigated the concept of Communities of Practice (CoPs) and the potential for their usage in the higher educational institutions (HEIs) environment. It first started with an in-depth literature review on the subject of CoPs. Literature review explored the problems faced by the CoPs in the business environment, factors affecting participants while they engage in knowledge-sharing processes and the technological aspects of CoPs.

Data for the empirical research was obtained from three higher-education institutions (HEIs). One of them was from Europe (University of Zadar, Croatia) and two from South Africa (University of Johannesburg and University of Witwatersrand). At this point it is good to realize, that although these institutions are geographically dispersed and have a different culture, they all are in similar situation when it comes to the establishment of CoPs. Therefore it is possible to perform a comparative study on them. Moreover such a comparative study may be useful for any future studies, which would investigate concepts such as CoPs or knowledge sharing across different countries, cultures and levels of development.

At later stage of the research the empirical data from the preliminary study carried out with the members of CoPs from the participating institutions was analyzed and presented. Next section will briefly describe the conclusions that can be drawn based on the secondary and primary research.

CONCLUSIONS

This research is the first step in the process of investigating the potential for the use of (Virtual) Communities Practice (VCoPs) in the Higher Educational Institutions (HEIs). Due to this fact it is rooted in the existing literature on the subject. The concepts from the literature review were utilized in order to develop constructs, which formed a basis for the empirical research. The empirical research was in a form of a pilot study carried out with three HEIs: University of Zadar (Croatia, EU), University of Johannesburg and University of Witwatersrand.

At this early stage it is difficult to provide decisive conclusions due to the limited scope of the underlying research. Based on the secondary research and the preliminary study it is however possible to state that the research in this area is very relevant and sought-after given the existing trends in the industry and academia. As it was described previously VCoP are an already established concept in the industrial world. Therefore their inclusion in the academia would allow students to learn this concept in advance and therefore would provide them a seamless start in the world of industrial VCoPs. This conclusion is valid both for the European countries as well as most-economically potent countries in the developing world (South Africa is one of the best examples of such countries).

Another conclusion that can be drawn based on this study is that there is a possibility of using the constructs taken from the industrial CoPs and "refining" them to the educational CoPs. It is expected that any further studies involved with such constructs will yield relevant and reliable results. The empirical pilot research carried out for this study is a visible proof for that. Although the questionnaire items need to be further worked upon it is possible to state that they are a good tool to measure the most common concepts of CoPs in HEIs.

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