

Personal Tacit Knowledge and Global Learning Professional Competencies— Multi-Dimensional Relationships

Rosalind R. King

University Information Technology Services, Kennesaw State University, Kennesaw, USA
Email: rking@kennesaw.edu

How to cite this paper: King, R.R. (2017) Personal Tacit Knowledge and Global Learning Professional Competencies—Multi-Dimensional Relationships. *Journal of Computer and Communications*, 5, 21-30.
<https://doi.org/10.4236/jcc.2017.513003>

Received: October 25, 2017

Accepted: November 25, 2017

Published: November 28, 2017

Copyright © 2017 by author and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Global learning professional competencies (GLPCs) are essential for college students to be able to address the impact of globalization in the 21st century. Organizations and society-at-large look to higher education to prepare college students with GLPCs. In addition, there is a body of literature that suggest personal tacit knowledge enhance GLPCs. However, researchers have done little from an empirical perspective to determine the relationship between the use of P-T K and enhancement of GLPCs, hence the purpose of this study. The statistical results revealed significant correlations, $p < 0.001$. From the findings of this research, faculty can teach different GLPCs to help students affect social positive change in the 21st century knowledge society through use of P-T K.

Keywords

Personal Tacit Knowledge (P-T K), Global Learning Professional Competencies (GLPCs), Multi-Dimensional Relationships

1. Introduction

Globalization has restructured global economies and life styles and changed the thinking of local, state, federal, and international governments [1]. Globalization has changed the landscape of communities, affected family cultures, and overshadowed personal identity [2] [3]. All sectors of society, such as the global markets, national security, healthcare, and governments expect college graduates to be able to address world problems and prepare to function as global citizens.

Globalization of the 21st century indicates the urgency to enhance global learning professional competencies (GLPCs) of college students [4]. GLPCs

needed for the 21st century include social awareness, multicultural competency awareness, and attributional competency. GLPCs also include social self-confidence, self-efficacy for social change, pluralistic orientation, and civic engagement [5].

1.1. Problem Statement

Researchers of education have concluded that students' use P-T K enhance GLPCs. However, researchers' contribution from an empirical perspective is limited in the area of relationship between college students' use of P-T K and enhancement of GLPCs. Although a wide range of intelligence and aptitude tests are administered to measure college students' academic intelligence, research findings have indicated that P-T K matters to a student's academic success including their desire to enhance GLPCs [6] [7]. However, the research conducted on P-T K focus on nonacademic environments.

1.2. Nature of the Study

The study used a quantitative methodology. College students took a self-administered Internet survey and data collection was the results from their responses. Data collected represent students' attitude about their use of P-T K to enhance GLPCs and the predictive individual relationships between the multiple dimensions of P-T K and GLPCs. As part of the overall research method, a quantitative method of approach was selected and full and part-time college students ($N = 289$) attending a university located in northwest Georgia completed the survey. The multivariate analysis of covariance (MANCOVA) technique used for this study determined whether individual relationships exist between the multiple dimensions of P-T K and GLPCs.

1.3. Theoretical Framework

The theoretical framework consists of multi-dimensions of P-T K and GLPCs. Experts [6] in the field of knowledge management view P-T K as knowledge acquired from personal life experiences and students' use of P-T K contributes to their academic success. Literature revealed a thread of discussions related to the concept of P-T K and some overlapped in nature. P-T K is practical knowledge not openly expressed and acquired in the absence of direct instruction. P-T K derives from social interactions [8]. It is believed that success in academic environments have been the result of students' ability to apply P-T K. Furthermore, P-T K means "action-oriented knowledge, acquired without direct help from others, which allows individuals to achieve goals they personally value [9]".

Others who coined the term P-T K viewed it as knowledge that is unspoken or not easily expressible [10] [11]. Through personal experiences, one can acquire P-T K in various contexts and it is an indispensable part of all knowledge [6]. Hence, P-T K is the type of knowledge that one acquires on one's own through life experiences. As people experience life, their learning is stored as P-T K. It is

undocumented, context sensitive, and dynamically created [12]. P-T K is only part of a persons' existence and difficult to articulate, therefore, not easily transferred. It embodies beliefs, ideas, and values [13].

It has been the norm for educational practitioners to predict students' academic success using scholastic aptitude test (SAT) scores, psychometric tests scores, and other measures of intelligence. Without seeking to undermine the contribution of intelligence tests in predicting academic success others scholars went to great lengths using quantitative methodology to prove that application of P-T K is linked to improving students' academic success [6] [9] [14]. This research study takes a step further to determine the relationship between P-T K and the enhancement of GLPCs.

Multiple dimensions of P-T K include cognitive skills, technical skills, and social skills [6] [8] [15]. Based upon empirical studies researchers concluded that cognitive skills, technical skills, and social skills have the most profound impact on improving academic success. It is predicted that these skills also have the most profound impact on the enhancement of GLPCs. Cognitive dimension is composed of beliefs, ideas, and values acquired through personal experience that become a part of an individuals' P-T K [13]. Thus, in terms of enhancing GLPCs, students can use their own P-T K to discover new knowledge about global challenges, apply life experiences to solving social injustice, apply creative ideas to affect positive social change, and promote personal values about civic engagement. Students' use of their cognitive skills play a significant role for globalization in the 21st century because they will be able to effectively solve worldwide global issues that matters to them.

The technical dimension of P-T K refers to an individuals' knowledge to perform certain skills [13]. Students that possess individual technical knowledge can use their own P-T K, for example; to teach their own language to others, write an article about their own cultural background, coordinate discussion forums (e.g., chat rooms) with diverse cultures on campus, and initiate fund-raising campaigns to support global issues that concern them. Such skills will become valuable to them when they meet global challenges and develop as global citizens.

The social dimension of P-T K involves interacting with others in a social situation [8]. It involves an understanding of how to use P-T K through social interactions. For example, from the perspective of students' desire to enhance GLPCs, they can use their P-T K in social settings when attending international activities on campus, joining others that speak up against racial injustice, working with multicultural teams to advance their knowledge about global challenges, and interacting with others that share similar interests about gender differences. It seems only reasonable to believe that social skills of this nature benefit global issues of the 21st century, especially when our nation as a whole continues to be impacted by globalization.

Moreover, multiple dimensions of GLPCs include attributional competency, multicultural competency awareness. Other dimensions of GLPCs include social self-confidence, self-efficacy for social change, social awareness, pluralistic

orientation, and civic engagement [5]. College students acquire these professional competencies by engaging in global learning. Global learning enhances and strengthens these professional competencies [5] [16] [17] [18]. Attributional complexity is the complexity of an individual being able to understand the causes of human behavior [19]. Students that possess attributional complexity skills understand that human behavior is rooted in an individual's cultural background. Individuals with attributional complexity skills understands that behavior could be directly related to concrete causes (e.g., other persons' behavior towards other people), a function of the immediate environment (e.g., university), a function of a wider community, or a function of the wider society. In essence, attributional complexity is a function of social behavior. Researchers give enough reason to believe that students who develop attributional complexity could be motivated to understand human behavior, which is a professional competency acquired through global learning.

Social self-confidence has been also associated with the dimensions of GLPCs. Social self-confidence means "the extent to which students believe that they possess leadership skills and the ability to negotiate effectively and work cooperatively with others [5]. Having social self-confidence has been associated with effective leadership skills such as embracing risk, constantly moving into unfamiliar territory, and embarking upon new challenges. The more students focus on avoiding risk and listening to their fears the less likely they will possess leadership skills and believe in their ability to work cooperatively with diverse cultures. Engagement with diverse cultures leads to high levels of social self-confidence. Students that possess self-confidence have a sense of their ability to deal effectively with different situations [20] including working with people of a different race, ethnicity, and gender in various social environments.

Multicultural competency awareness, which has been viewed as another dimension of GLPCs, means the level of knowledge a person possesses about own race ethnicity and culture, as well as race-ethnicity and culture of others [5]. It is an understanding and respect for one's own cultural identity and that of others. A person is able to examine and understand racism from a variety of perspectives [21]. Students that demonstrate multicultural competency awareness are more likely to understand that the challenges of society are complex. Students with multicultural competency awareness can express a particular viewpoint about women and their impact on society; students are able to challenge discrimination, the destruction of the environment, slavery, and inequity within this society. Finally, multicultural competency awareness empowers students to construct knowledge about different world problems affecting their community such as social injustice [21] [22].

Social awareness has shared its place along the dimensional continuum of GLPCs, as well. Primarily, it relates to students' attitudes towards interaction among diverse peers [5]. Social awareness is a skill used to recognize and understand the viewpoints and feelings of other diverse peers. Instead of looking in-

ward to understand one's self, social awareness is about looking outward in order to learn and appreciate others from different cultures and backgrounds. Students' social awareness centers on the emotions and feelings of others as one interacts in various situations, such as cooperating in shared tasks and working with other groups towards a common goal. Social awareness skills are critical for globalization in the 21st century [23] [24].

Self-efficacy means a person believes in the capability to accomplish tasks to affect social change [5] [25] [26] [27]. One scholar argued, "self-efficacy deals primarily with cognitively perceived capability of the self" [26]. It, too, has been associated with the other dimensions of GLPCs. Students that demonstrate self-efficacy have confidence in themselves and use their confidence to make a positive difference in the lives of others. Students with the highest sense of efficacy beliefs have the greater effort to affect positive social change and confront challenges such as disease, inequality, injustice, racism, and war. Because of the nature of our pluralistic society, pluralistic orientation is an important professional competency to acquire [28] [29]. A person that develops pluralistic orientation has the ability to see multiple perspectives in a diverse society [30]. Students with pluralistic orientation skills have the ability to see the world from another person's perspective. They are tolerant of others with different beliefs and have an openness to having their views challenged [5] [31] [32] [33] [34].

Civic engagement belongs among the other dimensions of GLPCs as well. The term *civic engagement* primarily reflects skills connected to civic behaviors [5] [35]. For example, writing to congress, senator, or local government. These skills are necessary for students to be able to engage in public life and political socialization. Civic engagement requires a range of skills. Some include monitoring public events and issues, making decisions about public policy issues, and taking action to improve political and civic life. Others include participating responsibly in the political and civic life of the community, thinking critically about conditions of political and civic life, and knowing the history about democracy in certain states and around the world [36]. Others that contribute to literature on civic engagement believe this competency requires having good character, obeying the law, volunteering to participate in established community structures, and questioning systems that produce injustices [37].

In summary, the concept of the theoretical framework reflects the predictive individual relationships between the multiple dimensions of P-T K, and GLPCs. Based upon the literature review a theoretical framework has emerged from this study. It provides a framework to begin addressing the research problem in order to identify a different approach that prepares students for globalization in the 21st century.

2. Research Method

The self-administered Internet survey consisted of two scales, which include GLPCs and P-T K. The GLPCs consist of a 72-item scale with four 5-point re-

sponse scales: 1 = *strongly disagree* to 5 = *strongly agree*; 1 = *very weak* to 5 = *very strong*; 1 = *not at all like me* to 5 = *very much like me*; 1 = *not at all important* to 5 = *very important*. The subscales measured college students' attitude toward multicultural competency awareness, pluralistic orientation, and civic engagement. The scale also measured students' attitude toward social awareness, self-efficacy, social self-confidence, and attributional competency. The P-T K scale measured college students' attitude toward the use of P-T K. This scale consists of 31 items and a 5-point response scale 1 = *strongly disagree* to 5 = *strongly agree*, and consist of three subscales cognitive skills, technical skills, and social skills.

Statistical Analyses

The multivariate analysis tested the following four hypotheses:

- 1) Individual students' use of cognitive skills is positively associated with their desire to enhance pluralistic orientation.
- 2) Individual students' use of technical skills is positively associated with their desire to enhance multicultural competency awareness.
- 3) Individual students' use of technical skills is positively associated with their desire to enhance civic engagement.
- 4) Individual students' use of social skills is positively associated with their desire to enhance civic engagement.

Pearson correlation coefficient analyzed the validity of the correlation between the multi-dimensions of P-T K and GLPCs. Cronbach's coefficient alpha tested the reliability of the P-T K and GLPCs subscales used in the survey.

3. Results

Cronbach's coefficient alpha (α) analysis showed a strong significant correlation between the items that measured the dimensions of P-T K. In fact, each α was above 0.90. Therefore, the test of internal consistency reliability was met for the P-T K to Enhance GLPCs scale. Additionally, Pearson correlation coefficient (r) revealed a positive correlation between cognitive skills and pluralistic orientation (0.430, $p < 0.01$) and $r^2 = 0.19$. Technical skills and multicultural competency awareness were positively correlated (0.281, $p < 0.01$) and $r^2 = 0.08$.

In addition, r indicated that technical skills and civic engagement were positively correlated (0.343, $p < 0.01$) and $r^2 = 0.12$. According to the results of r , social skills and civic engagement were positively correlated (0.374, $p < 0.01$) and $r^2 = 0.14$. Cronbach's coefficient alpha (α) analysis showed a strong significant correlation between the items that measured the dimensions of GLPCs. The smallest $\alpha = 0.70$. Moreover, the items statistically correlated with the items associated with the P-T K to Enhance GLPCs scale.

MANCOVA Wilks' lambda U test and F -test found interaction effects between cognitive skills and pluralistic orientation ($p < 0.001$), technical skills and multicultural competency ($p < 0.00$), technical skills and civic engagement

awareness ($p < 0.001$), social skills and civic engagement ($p < 0.001$) as predicted. The MANCOVA analysis tested the four null hypotheses. The null hypotheses rejected at 99% confidence level.

Tables 1-3 report the results of the F -test and MANCOVA Wilks' lambda U test. In summary, the statistical tests revealed a significant relationship exist between individual dimensions of P-T K cognitive, technical, social skills and GLPCs pluralistic orientation, civic engagement, and multicultural competency awareness.

4. Conclusions

Investigative scholars [6] [7] and [9] concluded based on quantitative methods that college students' use of P-T K significantly correlate with the improvement of academic success. Since academic success embodies the acquisition of GLPCs this research study established significant relationships exist between students' use of P-T K and enhancement of GLPCs. In addition, the study revealed that college students desired to use their P-T K to enhance GLPCs [9].

Table 1. F-test and Wilks' lambda U (WLU) Results for H1.

	<i>F</i> -test	Sig.	<i>WLU</i>	Sig.
Dimensional Constructs				
P-T K dimensional construct				
Cognitive skills	0.005	0.000***		
GLPCs dimensional construct			5.06	0.000***
Pluralistic orientation				

Note. $N = 289$. *** $p < 0.001$.

Table 2. F-test and Wilks' lambda U (WLU) Results for H2 and H3.

	<i>F</i> -test	Sig.	<i>WLU</i>	Sig.
Dimensional Constructs				
P-T K dimensional construct				
Cognitive skills	0.010	0.000***		
GLPCs dimensional construct			3.48	0.000***
Pluralistic orientation			3.00	0.000***

Note. $N = 289$. *** $p < 0.001$.

Table 3. F-test and Wilks' lambda U (WLU) Results for H4.

	<i>F</i> -test	Sig.	<i>WLU</i>	Sig.
Dimensional Constructs				
P-T K dimensional construct				
Cognitive skills	0.010	0.000***		
GLPCs dimensional construct				
Pluralistic orientation			3.18	0.000***

Note. $N = 289$. *** $p < 0.001$.

College students who participated in the study believed use of their cognitive skills could improve GLPCs, specifically, pluralistic orientation. Students believe through use of cognitive skills they could achieve new knowledge related to global challenges and affect positive social change by applying life experiences. College students agreed use of technical skills play an important role in the enhancement of multicultural competency awareness another GLPC. Students believe through use of technical skills they achieve GLPCs such as teaching and learning new languages, organizing campus discussions with diverse cultures, and publishing articles related to different cultural backgrounds [6].

In addition, college students desired to use their technical skills to give money to raise awareness about global issues, volunteer in their communities, and collaborate in fund raising events that highlight global issues. These are GLPCs enhanced through use of technical skills. According to the belief of college students, practice of social skills improves civic engagement another GLPC. Students are involved with international activities on campus, join in the fight against injustice, engaged with others to acquire new knowledge related to worldwide challenges, and interact with others that are different from them. Students felt use of their social skills enhanced these GLPCs [6].

This research study took further steps to determine the relationship between P-T K and GLPCs. The outcome of the statistical analyses reveals a significant relationship does exist. In addition, the hypotheses support the theoretical model described in this study. College students in this study believe that use of P-T K enhances pluralistic orientation, use of P-T K enhances multicultural competency awareness and civic engagement, and use of social skills enhances civic engagement. The findings of this study have the potential to be useful in various ways including the potential for college students to affect positive social change.

Limitation and Future Research

College students that participated attended full-time and part-time. Future studies could target college students based on course, degree, and major profiles. Generalizations were restricted to just one 4-year comprehensive university. Expansion of the study to include 2-year community colleges and research universities could determine whether students have similar or different beliefs about use of P-T K to enhance GLPCs. Instruments used to measure P-T K are scarce, as well, as empirical research [6]. The hope is that the instrument designed for this study with sub-scales that measured students attitude about the use of P-T K prove useful for future research. Qualitative methods were not part of this research study. Use of qualitative studies may further assess college students' desire to use P-T K to enhance GLPCs. In addition, causality between the P-T K and GLPCs relationships might be of interests in other studies.

References

- [1] Scott, P. (2000) Globalization and Higher Education: Challenges for the 21st Century. *Journal of Studies in International Education*, 4, 3-10.

- <https://doi.org/10.1177/102831530000400102>
- [2] Anheier, H.K., Glasius, M. and Kaldor, M. (2001) Introducing Global Civil Society. In: Anheier, H.K., Glasius, M. and Kaldor, M., Eds., *Global Civil Society*, 3-22.
 - [3] Rimmington, G.M. (2005) Challenges for Education toward 2010. Paper Presented at the Empire of Interdependence Conference. Friends University, Wichita.
 - [4] Bell-Rose, S. and Desai, V. (2005) Educating Leaders for a Global Society. http://asiasociety.org/files/GSF_EducatingLeaders.pdf
 - [5] Hovland, K. and Wathington, H.D. (2009) Building Knowledge, Growing Capacity: Global Learning Courses Show Promise. *Association of American Colleges and Universities*, **12**, 12-13.
 - [6] Leonard, N. and Insch, G.S. (2005) Tacit Knowledge in Academia: A proposed Model and Measurement Scale. *Journal of Psychology*, **139**, 495-512. <https://doi.org/10.3200/JRLP.139.6.495-512>
 - [7] Somech, A. and Bogler, R. (1999) Tacit Knowledge in Academia: Its Effects on Student Learning and Achievement. *The Journal of Psychology*, **133**, 605-616. <https://doi.org/10.1080/00223989909599766>
 - [8] Wagner, R.K. (1987) Tacit Knowledge in Everyday Intelligence Behavior. *Journal of Personality and Social Psychology*, **52**, 1236-1247. <https://doi.org/10.1037/0022-3514.52.6.1236>
 - [9] Sternberg, R.J., Forsythe, G.B., Hedlund, J., Horvath, J.A., Wagner, R.K., Williams, W.M. and Grigorenko, E.L. (2000) Practical Intelligence in Everyday Life. Cambridge University Press, New York.
 - [10] Polanyi, M. (1962) Personal Knowledge. Harper, London.
 - [11] Polanyi, M. (1966) The Tacit Dimension. Anchor Books Doubleday & Company, Inc., Garden City.
 - [12] Duffy, J. (2000) Knowledge Management: To Be or Not to Be. *Information Management Journal*, **34**, 64-67.
 - [13] Nonaka, I. (2007) The Knowledge Creating Company. *Howard Business Review*, **85**, 162-171.
 - [14] Sternberg, R.J. and Wagner, R.K. (Eds.) (1986) Tacit Knowledge and Intelligence in the Everyday World. In: Sternberg, R.J. and Wagner, R.K., Eds., *Practical intelligence. Nature and Origins of Competence in Everyday World*, Cambridge University Press, New York, 51-83.
 - [15] Nonaka, I. and Takeuchi, H. (1995) The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation. Oxford University Press, New York.
 - [16] Dey, E.L. (2009) Another Inconvenient Truth: Capturing Campus Climate and Its Consequences. *Association of American Colleges and Universities*, **12**, 10-11.
 - [17] Hovland, K. (2005) Shared Futures: Global Learning and Social Responsibility. *Association of American Colleges and Universities*, **8**, 1-22.
 - [18] Musil, C.M. (2009) Assessing Global Learning. http://archive.aacu.org/SharedFutures/documents/Global_Learning.pdf
 - [19] Fletcher, G.J.O., Danilovics, P., Fernandez, G., Peterson, D. and Reeder, G.D. (1986) 121 Attributional Complexity: An Individual Differences Measure. *Journal of Personality and Social Psychology*, **51**, 875-884. <https://doi.org/10.1037/0022-3514.51.4.875>
 - [20] Camicia, S.A. (2007) Prejudice Reduction through Multicultural Education: Connecting Multiple Literatures. *Social Studies Research and Practice*, **2**, 219-227.
 - [21] Hanley, M.S. (1999) The Scope of Multicultural Education.

<http://billhowe.org/MCE/the-scope-of-multicultural-education-by-mary-stone-hanle/>

- [22] Greene, S.R. and Kamimura, M. (2003) Ties That Bind: Enhanced Social Awareness Development through Interactions with Diverse Peers. Paper Presented at the Annual Meeting of the Association for the Study of Higher Education, Portland.
- [23] Springer, L., Terenzini, P.T., Pascarella, E.T. and Nora, A. (1995) Do White Students Perceive Racism toward Minority Students on Predominantly White Campuses? Paper Presented at the Annual Meeting of the American Educational Research Association, San Francisco.
- [24] Zins, J.E., Weissberg, R.P., Wang, M.C. and Walberg, H.J. (2004) Building Academic Success on Social and Emotional Learning: What Does the Research Say? Teachers College Press, New York.
- [25] Bandura, A. (1977) Social Learning Theory. Prentice Hall, Englewood Cliffs.
- [26] Bong, M. and Clark, R.E. (1999) Comparison between Self-Concept and Self-Efficacy in Academic Motivation Research. *Educational Psychologist*, **34**, 139-153. https://doi.org/10.1207/s15326985ep3403_1
- [27] Pajares, F. (1996) Self-Efficacy Beliefs in Academic Settings. *Review of Educational Research*, **66**, 543-578. <https://doi.org/10.3102/00346543066004543>
- [28] Hurtado, S., Engberg, M.E., Ponjuan, L. and Landreman, L. (2002) Student's Pre-college Preparation for Participation in a Diverse Democracy. *Research in Higher Education*, **43**, 163-186. <https://doi.org/10.1023/A:1014467607253>
- [29] Fahlbusch, E., Bromiley, G.W., Barrett, D., Lochman, J.M., Mbiti, J., Pelikan, J.J. and Vischer, L. (1999) The Encyclopedia of Christianity. Wm. B. Eerdmans Publishing Company and Koninklijke NV.
- [30] Engberg, M.E., Meader, E.W. and Hurtado, S. (2003) Developing a Pluralistic Orientation: A Comparison of Ethnic Minority and White College Students. Paper Presented at the Annual Meeting of the American Educational Research Association, Chicago.
- [31] Collins, P.H. (1996) Toward a New Vision: Race, Class, and Gender as Categories of Analysis and Connection. In: Rosenblum, K.E. and Travis, T.M., Eds., *The Meaning of Difference: American Constructions of Race, Sex, and Gender, Social Class and Sexual Orientation*, McGraw-Hill, New York, 213-223.
- [32] Pascarella, E.T., Edison, M., Nora, A., Hagedorn, L.S. and Terenzini, P.T. (1996) Influences on Students' Openness to Diversity and Challenge in the First Year of College. *Journal of Higher Education*, **67**, 174-195. <https://doi.org/10.1080/00221546.1996.11780255>
- [33] Prentice, D.A. and Miller, D.T. (1999) Cultural Divides: Understanding and Overcoming Group Conflict. Russell Sage, New York.
- [34] Stephan, W.G. and Stephan, C.W. (1996) Intergroup Relations. Westview Press, Boulder.
- [35] Kirlin, M. (2003) The Role of Civic Skills in Fostering Civic Engagement. <https://eric.ed.gov/?id=ED497607>
- [36] Patrick, J.J. (2002) Defining, Delivering, and Defending a Common Education for Citizenship in a Democracy. Paper Presented at the Summit on Civic Learning in Teacher Preparation, Boston.
- [37] Westheimer, J. and Kahne, J. (2004) What Kind of Citizen? The Politics of Educating for Democracy. *American Educational Research Journal*, **41**, 237-269. <https://doi.org/10.3102/00028312041002237>