Team Members Personality and Knowledge Sharing as Predictors of Project Team Learning

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ABSTRACT

Project team learning faces an uncertain task of knowledge creation, Pushing continuous learning behavior is important. As personality can predict learning style, can team member with high big five personality also influence project team learning to solve problems. During team proceed, what does knowledge sharing play a role about relationship team members personality with team learning..

111 teams were collected through two Taiwan public and private science and technology universities and a private institute of technology. Each team assumed to fulfill project-based learning.

Team members personality about Extraversion, Agreeableness, and Emotional Stability have positive and significant influence on team learning. However, knowledge sharing taken as another independent variables in hierarchical regression, three types of big five personality had influenced team learning significantly disappeared. This means team member personality in team learning play catalyst role. In process of practice monograph, knowledge sharing may be a main motive factor to push team learning.

Key words: team learning, personality, knowledge sharing, project-base learning

INTRODUCTION

Taiwan technological and vocational education system highlights the integrative characteristic of the theories and practical situation, students need to constitute teams to inquire into the practical problem through theories which they have learned. They should carry on special projects to solve problems and create knowledge with the idea of "do by learning." (Morgan, 1983).

Because project teams face an uncertain task of knowledge creation, they must invest in a continuous learning process. Predicting positive influence of the learning process among project teams could offer an advantage to organization learning (Dechant and Marsick, 1993; Edward, 1998). Previous studies have shown how personality influences learning strategies and learning outcome individually (Boekaerts, 1996). When team-building is initiated, personality will also be an influential factor?

Barrick and Mount (1991) investigated the relation of the big five personality dimensions (Extraversion, Emotional Stability, Agreeableness, Conscientiousness, and Openness to Experience) to job performance for five occupational groups. Results indicated that big five personality dimensions are valid predictors of the job performance. However,

Ellis et al., (2003) found teams learned more when composed of individuals who were high in Openness to Experience. Conversely, team learning was negatively affected when teams were composed of individuals who were high in Agreeableness. As project team learning proceeds a long-team knowledge creative task, on personality learning, whether teams were composed of individuals who were high in five personality will also positively influence team learning is the subject of this research.
In addition, Edmondson (2003) examines learning in interdisciplinary action teams. Result shows team members must coordinate in uncertain, fast-paced situations, and the extent to which they are comfortable speaking up with observations, questions, and concerns may critically influence team outcomes. Chuang (2004) indicated use of dialogue technique improved team process, evoked double loop learning, and thus increased team decision performance. Groups with high-knowledge integration paced their attention to both adaptive improvements to their process and task execution (Okhuysen and Eisenhardt, 2002).

Dynamics of team learning can be enhanced through use of knowledge sharing. Knowledge sharing may enhances team ability. But whether knowledge sharing plays an important variable for team personality to influence team learning is the subject of this research.

Constituted project teams in proceeding to establish topic, collect data, analyze data, and compose the research paper, need to cooperate how to work, discuss what have learned. They create knowledge to match purposes of projects effectively (Blumenfeld et al., 1991). Therefore, the purpose of this research will inquire into relationship of project teams which constitutes of big five personality and knowledge sharing influence team learning to create the useful knowledge.

Busato et al. (1999) found big five personality has positive influence on different learning style. Duff et al. (2004) indicted big five personality influencing on consciousness of mission, then has impact on academic record. Naquin & Holton (2002) emphasized big five personality is relevant to ability of employee, learning. By mentioned researches, we hypothesized one: team big five personality composition positively influence team learning.

The purpose of team learning is to promote decision performance in complicated task. Team members shared knowledge each other to construct and enlarge team mental model (Senge, 1990). Therefore, they have more ability to make practice monograph to solve uncertain problems.

In addition, project team learning handling a uncertain task is to create knowledge to solve practical problem. Facing this challenging knowledge creation learning vision, team members wants an“ba” to hare knowledge, that is socialization, externalization, combination, internalization, SECI model (Nonaka, 1991). Knowledge sharing can convert individual cognition to target territory and increase team ability to learn subject effectively (Okhuysen and Eisenhardt, 2002). By mentioned researches, we hypothesized two: knowledge sharing positively influence team learning.

METHOD

The range of this research defines business college student in technological and vocational education system. This system request students to build team in project curriculum. Each team guided by different teachers adopts autonomous management to reach project mission.

In process of practice monograph, members are assembled a team to fulfill project-based learning. They must work on an unknown theme to create knowledge based on outside information, theories knowledge and member's experience. Through the inquisition, research and conversion process, they find out new knowledge as the ability to solve problems.

Owing to project team taken as a sampling unit, integrity is very important. Receiving rate from teams is more difficulty than from individuals. The study puts questionnaires equally to team numbers into the leather paper bag. Asking acquainted teacher to issue questionnaire, the research gives cover letter and questionnaires to each senior clerk or member. When team members fill out questionnaires, we ask them to put in leather paper bag and hand over back.

Lists of grouping project teams in each school is not obtained easily. We adopt convenient sampling which includes two Taiwan public and private science and technology universities and a private institute of technology.
Questionnaire are sent out 1000 papers, receiving 804 papers, deducting the invalid questionnaire of filling the answer incompletely, the valid sample is 644 papers, valid received rate for 64.44%, 101 project teams totaled.

This survey takes structured questionnaires. The development of questionnaires totaled 28 items refers to related literatures. After questionnaire prepare to try for the first time, consult the interviewee to choice of words to the questionnaire, the aspects such as length and the topic sequence etc. suggests, taking into the questionnaire first draft correction, and carry on the formal questionnaire.

Questionnaire totaled 12 items about big five personality refers to Barrick and Mount (1991). It definition is the following:
(1) Openness to Experience: means to be imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive.
(2) Extraversion means to consist of two components, Ambition (initiative, ambition, and impetuous) and Sociability (sociable, exhibitionist, and expressive).
(3) Emotional Stability means not to be anxious, d angry, embarrassed, worried, and insecure.
(4) Agreeableness mean to be courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted, and tolerant.
(5) Conscientiousness reflects hardworking, achievement-oriented, and persevering.

Questionnaire about Knowledge sharing total 4 items referred to Okhuysen and Eisenhardt(2002). It definition is members want to give tacit and explicit knowledge to an other members, and help them understand knowledge content.

Questionnaire totaled 12 items about team learning is referred to Edward(1998). It definition is the following:
(1) Frame and Reframe: Framing is the initial perception of an issue situation or object on past understanding and present input, This perception can be about self group, or organization, When this perception is changed as a result of group discussion or analysis, the learning process of reframing has occurred, Thee are thinking process.
(2) Experiment: Reflective action undertaken by all or part of the group for hypothesis testing, moving testing, or discovery, This is an action process.
(3) Crossing Boundaries: Transfer or acceptance of knowledge, insights, or information between two or more parties, This is an action process that occur using an exchange mechanism.
(4) Integrating Perspectives: Synthesis of divergent views, such that apparent conflicts are resolved through dialectical thinking and consensus not compromise or majority rule, This links thinking and action.

Personality measure contents analyzed with oblique factor rotation, extract five personality factor named Extraversion, Openness to Experience, Agreeableness, Emotional Stability and Conscientiousness, Knowledge sharing, one factor named knowledge sharing. Team learning, one factor named team learning.

Measure of reliability with value of 0.6 deemed the lower limit of acceptability. (Hair et al, 1995), Cronbach α ranging from 0.63 to 0.81, these variables measure should be is acceptability.

RESULTS

Analyzing with hierarchical regression, Extraversion, Openness to Experience, Agreeableness, Emotional Stability and Conscientiousness taken as human characteristic first put into regression to predict project team learning in mode I. Knowledge sharing taken as human behavior second joins regression to predict team learning in mode II. Result is shown in table 1:

Table 1 shows Extraversion, Agreeableness, and Emotional Stability have significantly positive influence on
In model I, coefficient of determination $R^2$ is 21.4%, adjusted $R^2$ is 17.6%. In model, knowledge sharing join the estimate variable of the team learning ,, $R^2$ is 26%, adjusted $R^2$ is .21.7%. From model I to model II, rising $R^2$ presents additive independence variables has more explanatory power of regression equation .However, big five personality influencing on team learning did not attain significant level. . This is due to influence of knowledge sharing on team learning replaces big five personality factors .

**DISCUSSION**

Team members personality may predictor team learning. Specially, Extraversion with human relations interaction characteristic, Agreeableness with most likable characteristic at social situation , and Emotional Stability with anti-pressure characteristic  positively and significantly influence team learning .

Knowledge sharing taken as another independent variables, three types of big five personality had influenced team learning significantly disappeared. This phenomenon may account big five personality characteristic in team learning play catalyst role .In process of practice monograph, knowledge sharing may be a main motive factor to push team learning. Knowledge sharing replacing team members personality for influential effect to team learning  becomes an important variable.

Acquire the following standpoints from above-mentioned research.

First, compared with Ellis et al.(2003) research .This study finds Agreeable personality positively influences team learning. This is Ellis et al.(2003) research emphasized constructive controversy in an task of command and control simulator. This study emphasized a long –team project which created knowledge to solve practical problems. Agreeable personality promoting team friendship enhances team learning. In short , how much time team members works together and task characteristic may be important variables for team member personality to influence team learning.

Besides , carrying out project team learning , leaders should value and enhance willing of team knowledge sharing. Trying to reduce cost of knowledge sharing and  motivating knowledge flow in team members interaction is advantageous to the team learning.

The influences on team learns from group dynamics still have many variables, such as leader behavior , team morale, team participation etc. This research used team members personality and knowledge sharing to explore
influence on team learning. The coefficient of determination only is 21.7%. Future research can explore from other variables to understand motive characteristic of team learning. Besides, related to knowledge sharing, this research only inquire into willing of team members. Future research can aim at ability or type of knowledge sharing to influence team learning.

REFERENCES


