Creativity strategy selection for the higher education system

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Abstract   As one of the major developing locations that are playing a critical role in determining the national competitive advantage to accomplish the Taiwanese national goal of becoming a Republic of Creativity (ROC) and a kingdom of innovation, Taipei County has started to become a highlighted issue by both researchers and practitioners. Because a higher education system is at the core of generating innovation in a nation, how to prompt the creativity of higher education system in Taipei County has been one of the top concerns for the Taipei County government. Therefore, the aim of this study is to select critical creativity strategies that were developed by the Taipei County government for the higher education system to implement creativity improvement and enhancement. Based on the results, the most effective creativity strategy is Creative Intelligence. The higher education system in Taipei County is encouraged to improve and enhance creativity in accordance with the results so as to enhance the Taiwanese innovation level and fulfill the Taiwanese national goal of efficiency.

Keywords   Creativity · Creativity strategy · Higher education system · Taipei County · VlseKriterijumska Optimizacija I Kompromisno Resenje (VIKOR)

1 Introduction

In today's knowledge-based society, creativity is the basis of innovation (Dewett and Gruys 2007) and is the foundation of long lasting organizational development. In Taiwan, creativity is particularly crucial due to Taiwan's national vision of becoming a Republic of Creativity (ROC) and a kingdom of innovation (CNA 2009a,b). Therefore, how to successfully improve

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and enhance creativity has become an urgent issue for the Taiwanese government in recent years.

Current research advocates that to enhance creativity to improve innovation, merely putting more resources on developing capital will not work out, but on enhancing knowledge and the capacity continually to generate new knowledge and explore its applications (Williamson 2001). In this regard, creating and maintaining a knowledge base is an important step for an organization to succeed in its own industry (Gardiner 1993; Williamson 2001).

Owing to a strong dependence relationship between knowledge creation and creativity (Chen and Chen 2010a,b,c,d) and widely invoked in certain educational discourses (Allison 2004), higher education is thus becoming a critical subject for both researchers and practitioners because it fosters high tech talent, the key factor of rising national civil and innovative quality, and the main way to upgrade national competitive ability (Fairweather 2000; Meek 2000; Chen and Chen 2010a,b,c,d).

Unfortunately, with problems such as a dropping birth rate, economic depression, quest for membership in the WTO, interaction with China, and the quantity of university raising (Ministry of Education 2002) becoming serious year after year, students in Taiwan, unlike twenty years ago, confront pressures from both their parents and teachers. As a result, participation in global student competitions, resulting in greater creativity among students, has decreased (Chen and Chen 2010a,b,c,d). Obviously, such a phenomenon goes the opposite direction from Taiwanese national goals and makes Taiwan itself face great risks in losing its competitive advantage while competing globally.

To overcome the addressed difficulty, the Taiwanese government recently promoted a number of policies on how to regain and even upgrade Taiwanese creativity so as to further enhance innovation levels from education discourse. To the extent that government policies permit, Taipei County, a location that contains 1/6 of the population as well as 1/6 of the overall student rate of all of Taiwan, plays an important role in representing the quality of the Taiwanese overall competitive advantage and has started to develop relevant strategies. Based on the concept of Creative TAIPEI, five creativity strategies were therefore developed: Creative Curriculum and Teaching, Creative Alliance, Creative Intelligence, Creative Platform, and Creative Environment (Education Bureau 2007). The hope is to use the county's hard work to reach the Taiwanese national goal of becoming a Republic of Creativity (ROC) and kingdom of innovation.

Although such creative strategies are comprehensive, unlike organizational strategies, considerable national resources and time are needed. However, the time needed to re-obtain a national level of creativity and innovation to not only accomplishes the Taiwanese national goal but also to compete globally is limited. It is necessary for Taipei County to understand which strategy should be implemented before other strategies. In view of this, the aim of this study is to select the most critical creativity strategy for the higher education system while conducting creativity improvement and enhancement.

The study utilized VlseKriterijumska Optimizacija I Kompromisno Resenje (VIKOR), which was developed as a multiple-criteria decision-making method for use in solving discrete decision problems with non-commensurable and conflicting criteria (Opricovic and Tzeng 2004, 2007). It also emphasizes ranking and selecting from a set of alternatives and determines compromise solutions to problems involving conflicting criteria, helping the decision-makers reach their final decisions (Opricovic and Tzeng 2007). Therefore, the VIKOR method is adopted to rank five creativity strategies with respect to the relative weight of each criterion.

The remainder of this study is organized as follows. The creativity strategy of the higher education system in Taipei County is illustrated in Sect. 2. The VIKOR method is introduced

in Sect. 3. Numerical research is described in Sect. 4. Section 5 discusses and Sect. 6 concludes.

2 Creativity strategy of the higher education system in Taipei County

2.1 Creativity definition

Until recent years, there was no certain definition for creativity (Furnham et al. 2008). Over sixty different definitions of creativity could be found in psychological research (Taylor 1988). Current studies are trying to advance the traditional creativity definition, proposed by Ghiselin (1963), as the production of novel and useful ideas or solutions (Amabile 1988; Mumford and Gustafson 1988; Oldham and Cummings 1996; Shalley 1991; Zhou and George 2001) to best fit the needs of today's dynamic and competitive global environment. For example, Williamson 2001 proposed that creativity is a process requiring social support that must rest on a sound basis of skills and training. Creativity can also seem to be a balance between novelty and familiarity: new and different enough to capture consumers' attention, but familiar enough to not be misunderstood or rejected out of hand as too radically different (Ward 2004). It is a manifestation of productive energy and what might be called a productivity-minded attitude of a people (DiPietro and Anoruo 2006). Persaud (2007) indicated that creativity is the production end of ideas or products. Owing to creativity's numerous concepts and definitions, its evaluation criteria and methods widely vary depending on the research focus. In the following section, some important creativity evaluation criteria developed by current research are summarized, and some research evaluation criteria are proposed.

2.2 Creativity evaluation criteria

As mentioned previously, there is no fixed definition for creativity. Hence, a variety of evaluation criteria for evaluating creativity are continuously proposed year by year. Abilities, knowledge, thinking styles, personality, attitude, motivation, and environment are familiar criteria in psychological research (Amabile 1996; Sternberg 2003; Lubart and Guignard 2004). Besides, Zhou (1998) indicated that positive and informative feedback which provided under conditions of high autonomy could be used as creativity evaluation criteria.

Other creativity evaluation criteria that have emerged in recent years include phases for planning and preparation, ideation, verification and communication (Cropley 1999), suitable forms of teaching (Ripple 1999), innovation, technology, technology transfer, and startups (Fagerberg 1999; DiPietro and Anoruo 2006), intelligence, motivation to innovate, and creativity skills (Bharadwaj and Menon 2000), selecting people for skill in combining concepts (Mumford 2000), sound foundations of training, education and understanding as people within a particular domain of knowledge practice high-level skills of problem-solving, communication and analysis (Williamson 2001), personality (Gelade 2002), identification of a problem or an opportunity, the gathering of information and resources, the generation, evaluation, modification, communication and implementation of ideas (Zhou and George 2003), and other domain specific criteria (Sternberg 2005).

Though there are a variety of creativity evaluation criteria, owing to the shortage of studies emphasizing higher education, a group of future possible and potential creative pillars (Chen and Chen 2010a,b,c,d) that precisely select critical creativity strategy, creativity evaluation criteria and the evaluation structure for assessing creativity strategies in this study are based on Chen and Chen (2010a,b,c,d), who emphasized higher education (as Table 1 provided).

Table 1 Creativity evaluation criteria of this study

Goal[a]	Evaluation dimensions	Evaluation criteria	Weight
Creativity strategy selection for the higher education system	Personality trait (D1)	Knowledge learning (C1)	0.1403
		Self motivation (C2)	0.2656
		Personal characteristics (C3)	0.3125
	University effect (D2)	University climate (C4)	0.0000[a]
		Interaction between student and faculty (C5)	0.0000
		Student interaction (C6)	0.0000
	Family influence (D3)	Family living style (C7)	0.1132
		Parents' ways of raising children (C8)	0.1456
		Children's recognition of a learning model (C9)	0.0320
	Society education and interaction (D4)	Culture-level influence (C10)	0.0000
		Educational-level enhancement (C11)	0.0000

Note: [a]Weight < 0.0001
Source: Chen and Chen (2010a,b,c,d)

## 3 VlseKriterijumska optimizacija I kompromisno resenje (VIKOR)

The VIKOR method was developed by Opricovic and Tzeng (2004). This method is based on the compromise programming of multi-criteria decision making (MCDM). We assume that each alternative is evaluated according to a separate criterion function; the compromise ranking could be utilized by comparing the measure of closeness to the ideal alternative (Tzeng et al. 2005). The multicriteria measure for compromise ranking is developed from the L_P-*metric* used as an aggregating function in a compromise programming method (Zeleny 1982). The numerous J alternatives are represented as $a1, a2, \ldots, a_J$. For alternative a_j, the rating of the ith aspect is denoted by f_{ij}, i.e., f_{ij} is the value of the ith criterion function for the alternative a_j, and n is the number of criteria (Tzeng et al. 2005). The VIKOR method developed started with the form of the L_P-*metric* shown as follows (Opricovic and Tzeng 2004):

$$L_{P,j} = \left\{ \sum_{i=1}^{n} \left(w_i \frac{|f_i^* - f_{ij}|}{|f_i^* - f_i^-|} \right)^p \right\}^{1/p}, j = 1, 2, \ldots, m \quad 1 \leq p \leq \infty \quad (1)$$

In the VIKOR method, L_{1j} (represented by S_j) and $L_{\infty j}$ (represented by R_j) are used to formulate ranking measure. The solution gained by $\min_j S_j$ is with a max group utility, and the solution gained by $\min_j R_j$ is with a mix individual regret of the "opponent." The compromise solution F^c is a solution that is the closest to the ideal F^*, and compromise means

Fig. 1 Ideal and compromise solutions
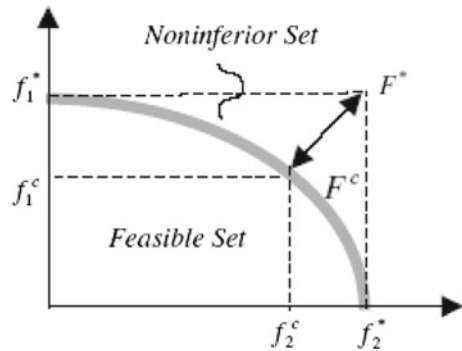
an agreement established by mutual concessions, as shown in Fig. 1 by $\Delta f_1 = f_1^* - f_1^c$ and $\Delta f_2 = f_2^* - f_2^c$ (Opricovic and Tzeng 2004).

The five VIKOR calculation steps are as follows (Opricovic and Tzeng 2004; Tzeng et al. 2005; Opricovic and Tzeng 2007):

Step 1.   Decide the best f_i^* and the worst f_i^- values of all criterion functions $i = 1, 2, \ldots, n$. If the ith function represents a benefit, then:

$$f_i^* = \max_j f_{ij}, \ f_i^- \min_j f_{ij} \tag{2}$$

Step 2.   Calculate the values S_j and R_j; $j = 1, 2, \ldots, J$ using the equations

$$S_j = \sum_{i=1}^n w_i \left(f_i^* - f_{ij} \right) / \left(f_i^* - f_i^- \right) \tag{3}$$

$$\text{and } R_j = \max_i \left[w_i \left(f_i^* - f_{ij} \right) / \left(f_i^* - f_i^- \right) \right] \tag{4}$$

where w_i are the weights of the criteria, expressing their relative importance.

Step 3.   Calculate the values Q_j, $j = 1, 2, \ldots, J$, using the relation

$$\begin{aligned} Q_j &= v \left(S_j - S^* \right) / \left(S^- - S^* \right) \\ &\quad + (1 - v) \left(R_j - R^* \right) / \left(R^- - R^* \right), \end{aligned} \tag{5}$$

$$S^* = \min_j S_j, \quad S^- = \max_j S_j$$

$$R^* = \min_j R_j, \quad R^- = \max_j R_j$$

and v is introduced as a weight of the strategy of the maximum group utility, here $v = 0.5$

Step 4.   Rank the alternatives, sorted by the values S, R and Q, in decreasing order. The results are three ranking lists.

Step 5.   We propose that a compromise solution is the alternative (d) that is ranked the best by the measure Q (min) if it satisfied the following two conditions:

1. $Q\left(a''\right) - Q\left(a'\right) \geq DQ$, called the acceptable advantage, where $\left(a''\right)$ is the alternative with the second position in the ranking list by $DQ = 1/(J - 1)$; J is the number of alternatives.
2. Acceptable stability in decision making: alternative d has to also be the best ranked by S and/or R. This solution is stable in a decision making process,

Table 2 The research structure of this study

Goal	Evaluation dimensions	Evaluation criteria	Weights	Creativity strategies
Creativity strategy selection for higher education system	Personality trait (D1)	Knowledge learning (C1)	0.1403	Creative curriculum & teaching (S1)
		Self motivation (C2)	0.2656	
		Personal characteristics (C3)	0.3125	Creative alliance (S2)
	University effect (D2)	University climate (C4)	0.0000*	
		Interaction between students and faculty (C5)	0.0000	Creative intelligence (S3)
		Student interaction (C6)	0.0000	
	Family influence (D3)	Family living style (C7)	0.1132	Creative platform (S4)
		Parents' ways of raising children (C8)	0.1456	
		Children's recognition of a learning model (C9)	0.0320	Creative environment (S5)
	Society education and interaction (D4)	Culture-level influence (C10)	0.0000	
		Educational-level enhancement (C11)	0.0000	

*Weight < 0.0001

which could be: "voting by majority rule" (when $v > 0.5$ is needed), or "by consensus" 0.5, or "with veto" ($v < 0.5$). Here, v is the weight of the decision making strategy of the max group utility.

If the conditions are not fully satisfied, then a set of compromise solutions is proposed:

1. Alternatives a' and a'' if only condition 2 is not satisfied, or
2. Alternatives a', a'', ..., $a^{(M)}$, if condition 1 is not satisfied, and $a^{(M)}$ is determined by the relation $Q\left(a^{(M)}\right) - Q\left(a'\right) < DQ$ for Max^M.

The best alternative that is ranked by Q is the one with the minimum value of Q. The main ranking result is the compromise ranking list of alternatives and the compromise solution with the advantage rate (Tzeng et al. 2002).

Ranking by utilizing the VIKOR method uses different values of criteria weights and analyzes the impact of criteria weights on the proposed compromise solution. It determines the weight stability intervals by using the methodology cited in Opricovic (1998). The compromise solution gained with initial weights (w_i, $i = 1, 2, \ldots, n$) will be replaced if the value of a weight is not in the stability interval. The analysis of weight stability intervals for a single criterion is utilized for all criterion functions, with the given initial values of weights; by doing so, the preference stability of a gained compromise solution may be analyzed using the VIKOR program (Opricovic and Tzeng 2004).

Table 3 Descriptions of the five creativity strategies

Creativity strategies	Description
Creative curriculum and teaching	To develop a creative-oriented curriculum and material for the teaching of a number of fields.
	To develop a justice appraisal standard so as to implement creative teaching.
	To construct a comprehensive recovery system so as to promote students' intelligence and creativity.
Creative alliance	To motivate different education system levels to share resources.
	To improve the interaction between the education system and the community.
	To develop a communication mechanism between industry, government, academia, and research unit.
	To provide the opportunity to interact between different cultural groups so as to further develop multi-cultural awareness that good for the development of creativity.
Creative intelligence	To stimulate students' intelligence and creativity potential.
	To promote learning organization and develop creativity groups.
	To promote the development plan of faculty creativity and to stimulate life learning.
Creative platform	To use creativity as an issue direct social phenomenon toward creativity through brainstorming.
	To solidify the administrative promotion of the mechanism and extend its service.
	To create a knowledge management system, and to motivate the sharing of innovation.
	To market multi-media promotion and to stimulate creative thinking.
Creative environment	To develop and maintain a creative school environment.
	To shape friendly and open-minded learning phenomena.
	To develop a multi-region learning environment and to extend the scope of creative learning.

Source: Education Bureau (2007)

VIKOR is a tool that benefits from MCDM in situations in which the decision maker is unstable at the beginning of system design; in addition, decision makers accept the obtained compromise solution due to its providing a maximum group utility, represented by Min Q, and a minimum of the individual regret, represented by Min R (Tzeng et al. 2002).

4 A numerical research

4.1 Sample and research structure

It is complicated to develop the research structure because such a structure must fit real practice. To do so, creativity evaluation criteria used in this study are based on those used by Chen and Chen (2010a,b,c,d), who focused on higher education students. In addition, we also use five creativity strategies: Creative curriculum and Teaching, Creative Alliance, Creative Intelligence, Creative Platform, and Creative Environment, which were developed by Taipei County (Education Bureau 2007). The final research structure is given in Table 2. In Table 3, the description of each creativity strategy is provided.

In this part, selecting critical creativity strategies by adopting the VIKOR method is implemented. Note that due to weights for creativity evaluation criteria computed by

Table 4 The average of original creativity values given by senior experts

Creativity strategies	Personality trait (D1)			University effect (D2)			Family influence (D3)		Society education and interaction (D4)			Total[a]
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	
S1	4.34	4.18	3.95	3.73	4.17	4.26	3.89	4.04	3.51	3.92	4.61	44.6
S2	3.63	3.37	3.89	4.05	4.01	3.27	3.19	3.33	3.21	3.26	3.92	39.13
S3	4.57	4.91	4.17	4.83	4.33	3.99	4.83	4.12	4.38	4.21	4.72	49.06
S4	3.04	3.11	2.79	3.13	2.68	2.91	3.22	3.13	2.84	3.44	2.15	32.44
S5	2.56	2.91	2.76	3.08	2.45	2.76	3.10	2.34	2.18	3.03	2.17	29.34

Note: [a] Is the un-weighted total score of the performance value

Chen and Chen (2010a,b,c,d), to avoid bias increasing, weights for creativity evaluation criteria are also adopted in the later calculation.

A total of eighty senior expert questionnaires were forwarded to senior university faculties within Taipei County. Each senior university faculty is restricted to have at least ten years of service in either or both academia and industry. After a week questionnaire-return notification, thirty-nine questionnaires were received, none of which was discarded. The response rate was 49%; that is, a total of thirty-nine senior expert questionnaires for analysis.

Among the participants, 17 (4%) were male and 22 (56%) were female. The background groups are professor (36%), associate professor (44%), and assistant professor (20%). Additionally, 27% of the respondents were from professional-intensive universities, 9% respondents were from research and teaching-intensive universities; and 3% respondents were from education-in-practical-intensive universities. Their ratings with regard to the performance of each creativity strategy under each creativity evaluation criterion, the five-point scale ranging from 5 (the best) to 1 (the worst), are evaluated based on the senior experts' professional experiences.

4.2 Selecting the most critical creativity strategy with the VIKOR method

To select the most critical creativity strategy, in this section, the VIKOR method for the rating of the creativity performance of five creativity strategies is computed based on the original weights provided by Chen and Chen (2010a,b,c,d) (see Table 1). In order for the result to be comparable to that of Chen and Chen, the five-point scale ranging from 5 (the best) to 1 (the worst) is evaluated based on the senior experts' professional experiences.

Initially, the original values are given in Table 4 by averaging thirty-nine senior experts' rating values. To achieve the highest aspired level (Opricovic and Tzeng 2002), f_i^* is set to 5 (the best) and f_i^- is set to 1 (the worst), instead of using Eq. 2. Then, by utilizing Eqs. 3–4, S_j and R_j are then computed. The Q values are obtained by using Eq. 5 and setting 0.5 for v, voting by consensus. Last, based on the Q values, the priors of the five creativity strategies are acquired. The overall result is presented in Table 5. In accordance with the result, the most critical creativity strategy is Creative Intelligence ($Q = 0.000$). The remaining strategies are the following: Creative curriculum and Teaching ($Q = 0.2752$), Creative Alliance ($Q = 0.5854$), Creative Platform ($Q = 0.9156$), and Creative Environment ($Q = 1.0000$).

5 Discussion

The present paper aims to select critical creativity strategies developed by the Taipei County government for the higher education system in Taipei County to implement creativity

Table 5 The overall result of the VIKOR evaluation

| Evaluation creativity criteria | Creativity evaluation[a] | | | | | PIS/ NIS | | Relative weight |
	S1	S2	S3	S4	S5	f_i^*	f_i^-	w_i [b]
C1	0.0161	0.0656	0.0000	0.1068	0.1403	5	1	0.1403
C2	0.0969[d]	0.2045[d]	0.0000	0.2390	0.2656	5	1	0.2656
C3	0.0488	0.0621	0.0000	0.3059[d]	0.3125[d]	5	1	0.3125
C4	0.0000	0.0000	0.0000	0.0000	0.0000	5	1	0.0000[d]
C5	0.0000	0.0000	0.0000	0.0000	0.0000	5	1	0.0000
C6	0.0000	0.0000	0.0000	0.0000	0.0000	5	1	0.0000
C7	0.0615	0.1073	0.0000	0.1053	0.1132	5	1	0.1132
C8	0.0065	0.0646	0.0000	0.0810	0.1456	5	1	0.1456
C9	0.0127	0.0170	0.0000	0.0224	0.0320	5	1	0.0320
C10	0.0000	0.0000	0.0000	0.0000	0.0000	5	1	0.0000
C11	0.0000	0.0000	0.0000	0.0000	0.0000	5	1	0.0000
S_j	0.2425	0.5211	0.0000	0.8604	1.0092			
R_j	0.0969	0.2045	0.0000	0.3059	0.3125			
Q_j	0.2752	0.5854	0.0000	0.9156	1.0000			
Rank [c]	2	3	1	4	5			

Note:[a] Is obtained from $w_i \dfrac{\left| f_i^* - f_{ij} \right|}{\left| f_i^* - f_i^- \right|}$ (the weighted value of the arithmetic average of the original performance evaluation value given by experts)

[b] Is the weight of each performance evaluation criteria (as shown in Table 1)

[c] Are rankings based on the rules (the smaller the value of Q_j, the better)

[d] Represents the worst performance of the 11 evaluation criteria in every creativity strategy evaluation value

improvement and enhancement. In accordance with the analysis result, Creative Intelligence is believed to be the most critical strategy for creativity improvement and enhancement by covering all creativity evaluation criteria with high scores. On the other hand, faculty in the higher education system of Taipei County ought to stimulate students' intelligence and creativity potential, promote learning organization and develop creativity groups and promote the development plan of faculty creativity and life learning so as to effectively and efficiently improve the overall creativity performance of the universities. In view of this, knowing how to implement the Creative Intelligence strategy is necessary for today's higher education system in Taipei County.

The creativity evaluation criteria, along with weights proposed by Chen and Chen (2010a,b,c,d), provide clear ways to improve the higher education system. Improving students' personal characteristics is the top priority. Based on the "Five Factor Model," or FFM (Costa and McCrae 1992), a well-known model for organizational change research, there are both personalities that tend to change, which could rationally refer to creativity for innovation, such as extraversion and agreeableness, and personalities that tend not to change, which could rationally refer to a lack of creativity for innovation, such as neuroticism (Chen and Chen 2008), or searching for ways to promote those who do not like to accept creativity as an urgent issue. Due to the differences in organizational resources and developmental directions among the universities, the study suggests universities should periodically conduct student personality surveys to appropriately develop or/and adjust teaching as well as educational style to successfully motivate students' intelligence and creativity potential.

Self-motivation is always important for stimulating creativity. Without self-motivation, a person loses his confidence and directly decreases his creativity potential. Although the creativity evaluation criteria used in this study are for students, to match up against the strategy

of Creative Intelligence, this study claimed that it is also important for faculty to know that their self motivations are critical not only for their own creativity development but also for the motivation of students' creativity. In this regard, this study advocates that top managers ought to release more private spaces and research award offers to stimulate faculty and student research. Additionally, it is also important for top managers to ensure that information and teaching materials used by faculty is always updated not only to ensure that students' knowledge and creativity are appropriately developed but also to reach the goal of stimulating life learning among both faculty and students.

Knowledge learning is always the foundation of creative idea generation and constructive innovation implementation (Chen and Chen 2010a,b,c,d). It is also well reflected by one of the elements of the strategy of Creative Intelligence to promote learning organization and develop creativity groups. Therefore, this study suggests that from a macro point of view, universities should provide more opportunities for students to take courses from other universities, for international students to come to learn and share their knowledge, and for faculty to go aboard to take refresher courses in order to achieve the goal of promoting learning organization. From a micro point of view, faculty could adapt brainstorming, group, and team project debates as main teaching styles instead of lectures to continuously promote students' creativity and achieve the goal of developing creativity groups.

Keys for enhance student creativity as well as diversity of intelligence and overall performance of creativity and innovation of the university are definitely not the responsibility of only the university. Students' family living style and parents' ways of raising children also play critical roles in helping the enhancement of students' creativity potential and intelligence. Thus this study argues that parents should provide more chances for their children to express themselves rather than just ask them to listen, which is traditional in many Asian countries, including in Taiwan. In addition, unlike the living style in western countries, the living style in Taiwan tends to be one of home life instead of outside activities, which seriously decreases the creativity development of children due to fewer opportunities for broadening their horizons. Thus, this study proposes that parents should be encouraged to hold more outside-oriented family activities when family members get together. By doing so, not only does the network connection between each member improve, but children's creativity and intelligence could greatly improve as well.

Although other creativity evaluation criteria are also important for forming the comprehensive implementation of the Creative Intelligence strategy, they are secondary to Creative Intelligence due to the 80/20 principle and the limited organizational resources of each university. Such concepts are also appropriately fit to the usage of other strategies because all the strategies could bring a higher level of innovation to a university and could further help improve the overall innovation level of higher education system. This study advocates that once the most critical creativity evaluation criteria and strategies are completely implemented by each university in Taipei County, the Taiwanese higher education system will significantly improve and enhance its innovation level globally. The creativity evaluation criteria could also be utilized in other cities and counties, and taking other key developing cities and counties and their creativity strategies into account to refine the results of this study is a potential topic for future research.

6 Conclusion

With the conflict between the Taiwanese national goals of becoming a Republic of Creativity (ROC) as well as a kingdom of innovation and the decrease in competitive advantages and

creativity as well as innovation levels in Taiwan currently, this study aimed to help Taiwan overcome difficulties in its higher education system by fostering high tech talent, the key factor of rising national civil and innovative quality and the main way to upgrade national competitive ability. From a practical viewpoint, creativity strategies proposed by Taipei County and their importance for the overall Taiwanese civil quality and national competitive advantage development are limited by the organizational resources of each organization as well as the 80/20 principle. Creativity is the basis of innovation and is the foundation of long lasting organizational development. As a result, this study aims to select critical creativity strategies developed by the Taipei County government for the higher education system to implement creativity improvement and enhancement. According to our results, by following these creative strategies, the higher education system in Taipei County should improve and enhance creativity so as to enhance the Taiwanese innovation level and fulfill the Taiwanese national goal of efficiency.

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