Emerging Global Literacy
What College Graduates Ought to Be

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Abstract: Currently, the influence of globalization has undeniably ushered global education as one of the top priorities of the academe. More importantly, as Taiwan’s higher education institutions are transforming into global institutions of learning, wherein the goal is to develop a globally literate individual. Hence, studies regarding such issue will surely be of leading demand in the 21st century. With this in mind, the main objective of the current study is to develop a set of dimensions inherent in Taiwan general education that can appropriately define a globally literate individual. Using the structured conceptualization method of concept mapping, a mixed-method participatory approach that combines group processes with a sequence of multivariate statistical analyses, was accomplished. A total of twenty experts comprising of school administrators, teachers, researchers, and experts in the field were invited to generate the underlying dimensions that can encompass the holistic definition and ultimately develop a global literacy scale. Result shows that there are 18 different but over-lapping factors that are needed to develop a holistic individual. Similarly, experts agree that higher education institutions should seek ways to further enhance the development of such global literacy.

Keywords: General education; global literacy scale; concept mapping; policy implementation; holistic individual

1 Introduction

The challenges facing the 21st century are unquestionably global in nature [1]. It is quite inevitable that as diversity gradually becomes a feature in most cultures and as people need to get along and have peaceful dialogue with the rest of the world, the need for raising students’ global literacy is crucial[2]. The turn of the century marked not only the start of the age of information technology but also the start of age of knowledge economy. More so, with the education system in many nations developing from elite to mass education, the issue of the quality of education should be revisited. In reality, such drive towards massification of higher education has actually caused the average qualification for academics in many countries to decline [3]. The philosophy behind mass education is for every individual having equal opportunity for education. Thus, equality in humanitarian value should not be ignored in this global society.

In this postmodern age, economic imparity, the destruction of world ecology, war and conflict, terrorism, destruction of distinctive cultures, social inequality, and ethnic conflict have all caused distrust and malice among people, and there exists an identity crisis in the very depth of the human spirit [4]. There is indeed a need to not only revisit but rethink the humanitarian values in this globalized society. Furthermore, within economic perspective, a transnational global society has already emerged [5]. Such emergence has brought about drastic changes not only in our daily living, but in the behaviors, attitudes, and values of the people. In essence, the cultivation of a globally literate individual shall be able to evoke the innate goodness of humanity.

The current drive for globalization and internationalization of higher education institutions in Taiwan is inevitable. As Taiwan’s higher education institutions are transforming into global institutions of learning, wherein the goal is to develop a globally competitive individual. It is undoubtedly crucial for Taiwanese college students to become a globally literate individual. There is an urgent need to foster multicultural, trans-cultural and trans-national perspectives and to develop mutual respect for each other’s cultural identity. It is further realized that the importance of global literacy education and the understanding of the different complex multi-dimensions that make up a globally literate individual. Therefore, developing a global literacy individual scale is necessary in prompting the educators and administrators to rethink over the quality of education in preparing students and future citizens in facing the new challenges ahead.

With this in mind, this study shall aim to develop a set of dimensions inherent in Taiwan general education that can appropriately define a globally literate individual. Using the structured conceptualization method of concept mapping, a mixed-method participatory approach that combines group processes with a sequence of multivariate statistical analyses. A total of twenty experts comprising of school administrators, teachers, researchers, and

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experts in the field shall be invited to generate the underlying dimensions that can encompass the holistic definition and ultimately develop a global literacy scale.

2 Foundations of Global Literacy

The concept of global literacy as proposed in this study is quite different from the advocacy of the Global Literacy Foundation, which is to instill a global impact and boost the quality of literacy and research programs [6]. This study anchors the much needed basic attitudes, skills, and traits that an individual should possess in the current and future age. Banks [7] mentioned that global literacy is a form of re-conceptualized citizenship and a sort of multi-cultural citizenship, which will enable students to acquire a delicate balance of cultural, national and global identification. Nakamura [2] emphasizes that global literacy should include cross-cultural competence; a sense of sensitivity in a multicultural, trans-cultural and transnational perspectives. Furthermore, it should also help develop cognitive, affective and social skills to reconcile from one’s own strength and integrate seemingly opposing values on a higher level for the purpose of equitable coexistence on this fragile earth [8].

Such concepts of global literacy are seen as an off-spring of the current push for global education. A seminal literature written by Fisher and Hicks [8] states that global education promotes the knowledge, attitudes, and skills relevant to living responsibly in a multicultural and interdependent world. There are actually many definitions of global education. During the Maastricht Global Education Declaration [9] a definition was noted: Global education is education that opens people’s eyes and minds to the realities of the globalised world and awakens them to bring about a world of greater justice, equity and Human Rights for all.

3 Methodology

3.1 Structured Conceptualization Method

This study utilizes the qualitative process of structured conceptualization method of concept mapping. Structured conceptualization method can be used as both a descriptive and interpretive tool for understanding results [10]. Concept mapping is a type of structured conceptualization which can be used by groups to develop a conceptual framework which can guide evaluation or planning [11,12]. The current objective is to develop a set of dimensions inherent in Taiwan general education that can appropriately define a globally literate individual. In order to accomplish such a difficult task, it is essential both to work across a wide variety of disciplines and to include a diverse collaboration of stakeholders at all levels of the academic system including the experts in the field (non-academic), school administrators, policymakers, and the academic research community. These challenges place considerable burdens on the academic system and require processes and methods that can address the complexity and the demanding requirements of such work. Therefore, to address the challenges of this nature, educational policy researchers have over the past three decades developed a methodology called structured conceptualization [13].

The term structured conceptualization refers to any process which can be described as a sequence of concrete operationally-defined steps and which yields a conceptual representation [13]. In the typical case, six steps are involved:

1) Preparation (including selection of participants and development of focus for the conceptualization);
2) the Generation of statements;
3) the Structuring of statements;
4) the Representation of statements in the form of a concept map (using multidimensional scaling and cluster analysis);
5) the Interpretation of maps; and,
6) the Utilization of maps.

In essence, concept mapping encourages the group to stay on task; results relatively quickly in an interpretable conceptual framework; expresses this framework entirely in the language of the participants; yields a graphic or pictorial product which simultaneously shows all major ideas and their interrelationships; often improves group or organizational cohesiveness and morale [13].

3.2 Research Participants

For the structured conceptualization method of concept mapping, participants are 20 individuals comprising of school administrators, scholars, and experts in various fields. Sampling and assignment of research participants are part of the research process that are critical to the success and accuracy of the research [14]. Researchers mentioned that errors during this phase plague investigators in many disciplines and can easily corrupt the worth of the entire study [15,16]. Hence, careful selection of participants is always a must in social science studies. It is further noted that the in order to minimize gender bias, the participants’ gender shall be kept in equal proportion. The 20 participants, who comprises of 10% scholars, 5% school administrators, and the remaining 5% experts coming from the field was strategically selected. Stratified sampling involves dividing the population into homogeneous groups, wherein each group contains subjects with similar characteristics [17].

3.3 Research Process

To determine a set of dimensions inherent in Taiwan general education that can appropriately define a globally literate individual using the idea generation phase of the
structured conceptualization method of concept mapping.

3.3.1 Preparation Stage

There are two major tasks which must be undertaken prior to the commencement of the actual group process. First, the facilitator must work with the parties involved to decide on who will participate in the process. Second, the facilitator must then work with the participants to decide on the specific focus for the conceptualization. In essence, the facilitator's role is only to manage the process, while the content, interpretation and utilization of the concept map are determined entirely by the group.

In the scenario within which concept mapping is applied, it is assumed that there is an identifiable group responsible for guiding the evaluation or planning effort. This study shall involve 20 strategically-selected participants who comprise of 10% scholars, 5% school administrators, and the remaining 5% experts coming from the field. It is further noted that a group size of 20 insures a variety of opinions and still enable good group discussion and interpretation [11].

Participants shall be contacted and informed of the date and venue of the session. Within this session, the participants shall help develop the main focus of the inquiry. This is actually the second major preparatory step, which involves developing the focus or domain of the conceptualization. There are two separate desired products here. First, the participants must define the focus for the brainstorming session. Second, the focus for ratings which are performed during the structuring step of the process needs to be developed. This essentially involves defining the dimension(s) on which each of the brainstormed statement will be rated.

3.3.2 Generation of Statements Stage

Within this session, generation of statements stage (similar to a brainstorming session) involves with the actual generation of ideas pertinent to the concept of the different dimensions inherent in Taiwan general education that can appropriately define a globally literate individual. The actual concept mapping process begins with the generation of a set of statements which ideally should represent the entire conceptual domain for the topic of interest. Participants shall be encouraged to generate lots of statements and are told that there should be no criticism or discussion regarding the legitimacy of the statements which are generated during the session. Participants are encouraged to ask for clarification of any unfamiliar terms or jargons so that all who participate may understand what would be intended by a given statement.

Once a final set of statements has been generated, it is valuable for the group to examine the statements for editing considerations as sometimes the wording of statements generated in a brainstorming session may be awkward or a technical jargon is not clear. In general, each statement should be consistent with what would be called for in the brainstorming prompt and should be detailed enough so that every member of the group can understand the essential meaning of the statement.

3.3.3 Structuring of Statements Stage

The concept mapping analysis encompasses the organization and representation phases wherein the core data for a concept map come from the unstructured or free sort or also known as the structuring of the statement procedures [18, 19]. Each participant shall be tasked to group the generated statements into piles of similar ones. Participants are free to use as few or as many piles as they think necessary to arrange the statement set meaningfully in terms of their similarity.

3.3.4 Representation of Statements Stage

These data are decidedly judgmental and qualitative. To use the data in the subsequent quantitative multivariate analyses, each sort is first converted to a 0 and 1 co-occurrence matrix [19], which has as many rows and columns as the statements are. A 1 is entered into a cell if the row and column statement pair is placed by the participant in the same pile and a 0 is entered if the statements are not sorted together in a pile.

These matrices are then summed across all participants, yielding a similarity matrix that indicates the number of participants that sort each pair of statements together. This summed square similarity matrix is the input for multidimensional scaling (MDS) analysis [20, 21], which takes dissimilarity data and represents them as distances in Euclidean space.

3.3.5 Interpreting and Utilization of the Maps

In concept mapping, the MDS solution is typically restricted to two dimensions to allow for the integration of additional information from cluster and rating analyses. Thus, for each statement, the MDS analysis yields an X and Y value. When plotted in a bi-variate plot, these constitute the basic point map form of the concept map.

The MDS X,Y values are the input for hierarchical cluster analysis using Ward’s algorithm [22, 23], which has the effect of partitioning the MDS statement map hierarchically into non-overlapping clusters.

This cluster arrangement is then superimposed on the point map (the cluster map) and the participant group typically names these clusters. If rating data are collected in the project, they can be averaged for all participants and for any subgroups and can be overlaid on a point or cluster concept map to identify meaningful patterns, thus, forming the different dimensions inherent in Taiwan general education that can appropriately define a globally literate individual.

4 Results and Discussions
Results of the structured conceptualization method revealed that there are a total of 18 overlapping factors that make up the global literacy scale. The factors are as follows:

1) Care for society – service learning; service in mind
2) Conservation – ecology; energy conservation; green living; conservation of resources
3) Creativity – appreciation of beauty; be able to appreciate arts, music, and so on
4) Cross-cultural skills - be able to adapt, understand, and give the benefit of the doubt when encountering a foreign culture
5) Emotional intelligence – be objective in decision making; knows how to control one’s temper
6) Gender equality – respect for individual differences; equal opportunity for all; knows the boundary
7) Humanitarianism – respect in life and existence; all race are created equal; welfare of other people
8) Integrity – honesty; trustworthy
9) Language skills – being able to communicate with a person who speaks a different language; can speak and understand at least two languages
10) Life-long learning – good learning attitude; knows the value of knowledge
11) Localization – know who we are and who you represent; Nationalism; love of country
12) Multiliteracies (technological skills) – know how to operate electronics; etiquette in using the internet
13) Practical intelligence – knows important relevant information; knows how to navigate around; knows how to seek help and ask for information; knows how to use the basic technology
14) Respect for others’ privacy (including copyright/infringement) – knows the boundary (using internet); technological etiquette
15) Social justice – justice, righteousness; care for common good; respect for individual’s right
16) Team player – being able to work with other people of different background; function well in group collaboration and cooperation; responsible
17) Time management – includes keeping meeting on schedules; know when to have leisure time
18) Virtues – respect for elderly; kind; benevolent

5 Conclusions

This study shall provide an overview of the complex multi-dimension indicators that shape a globally literate individual. Within the different indicators, the importance and the feasibility of attainment of the various dimensions shall provide not only educators in the academia, but also the other stakeholders, such as parents and students, the much needed information and know-how in the development of a holistic individual. Furthermore, various strategies geared towards the development of a globally literate individual shall be proposed to better improve the learning experiences of the students, which can therefore provide the potential of contributing to the persistent improvement of students.

References