

# Research on Guiding Strategic Alliance Schools to Participate in International Invention Exhibition and Competitions

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**Abstract**—In view of the increasingly grave trend of low birth-rate, our school provides guidance in joining International Invention Exhibition and Competitions to high school (vocational) schools that signed a strategic alliance with us. This article uses as an example the collaborative guidance on the creative invention subject provided by teachers of Far East University to students of Chung Gang Senior High school and National Beidou Senior Home Economic & Commercial Vocational High School. It is expected that friendly relations would be established through this cooperation so as to help students win in contests and facilitate student recruitment in the future.

**Keywords**—*international invention exhibition, design competitions, creative thinking.*

## I. INTRODUCTION

The strategic alliance mentioned in this article refers to formal signing of a contract between our school and other high schools (vocational school) grounded on a common goal to enable each party to get what it wants, to complement each other, and to mutually cooperate base on each other's strengths and weaknesses. In recent years, the low birth-rate situation promoted a closer link and cooperation between upstream and downstream schools in hopes of creating better teaching quality to facilitate student recruitment.

Taiwan attaches importance to creative education and promotes innovation and invention. With decades of hard work, it is now a creative nation, winning prestigious International Invention Exhibition & Competitions annually and is called the first in Asia. Creative invention is an important factor for improving the convenience of human life. Good innovative ideas improve the efficiency of life. If creativity can be used to conserve energy and reduce carbon, it can lead to more effective environmental protection [6].

## II. LITERATURE REVIEW

Most of the organizations seek ways to survive in today's competitive environment [1]. Developing students' creative problem solving (CPS) is widely considered to be an important goal in engineering design education [3]. Therefore, there are studies that

explore the similarities and differences between lateral and vertical thinking. They put forward discussions in an attempt to find ways to help people think and invent ideas [5].

Creativity is considered to be the key to learning. Some studies have pointed out that creative teaching can improve students' creativity and make learning more effective [7]. Creativity is considered as a necessary condition for all kinds of professionals [2]. Furthermore, it has a great impact on the staff of an entrepreneurial organization [4].

## III. CREATIVE DESIGN

The researcher of this article has many years of experience in creative invention competition participation; therefore, on behalf of the strategic alliance, she was invited to Chung Gang Senior High School and National Beidou Senior Home Economic & Commercial Vocational High School to guide students and assist them in pre-contest preparation and on-site presentation.

Careful planning and practice are necessary for the preparation, creative inspiration, screening, confirmation, as well as the production of models, posters, short films and DMs for International Invention Exhibition and Competitions. However, difficulties and bottlenecks may be encountered during the process. Therefore, assistance from teachers with different specialization is necessary in order to get good grades.

## IV. DESIGN RESULTS

The researcher of this article has collaborated with teachers of strategic alliance schools to provide guidance for International Invention Exhibition and Competitions, instructed students in giving oral presentations, and trained them to give proper response to on-the-spot questions of judges so as to help students win the prize. The following is the 2016 actual presentation of the students' creations (figure 1) and the exhibition of their comparatively better works (figure 2).

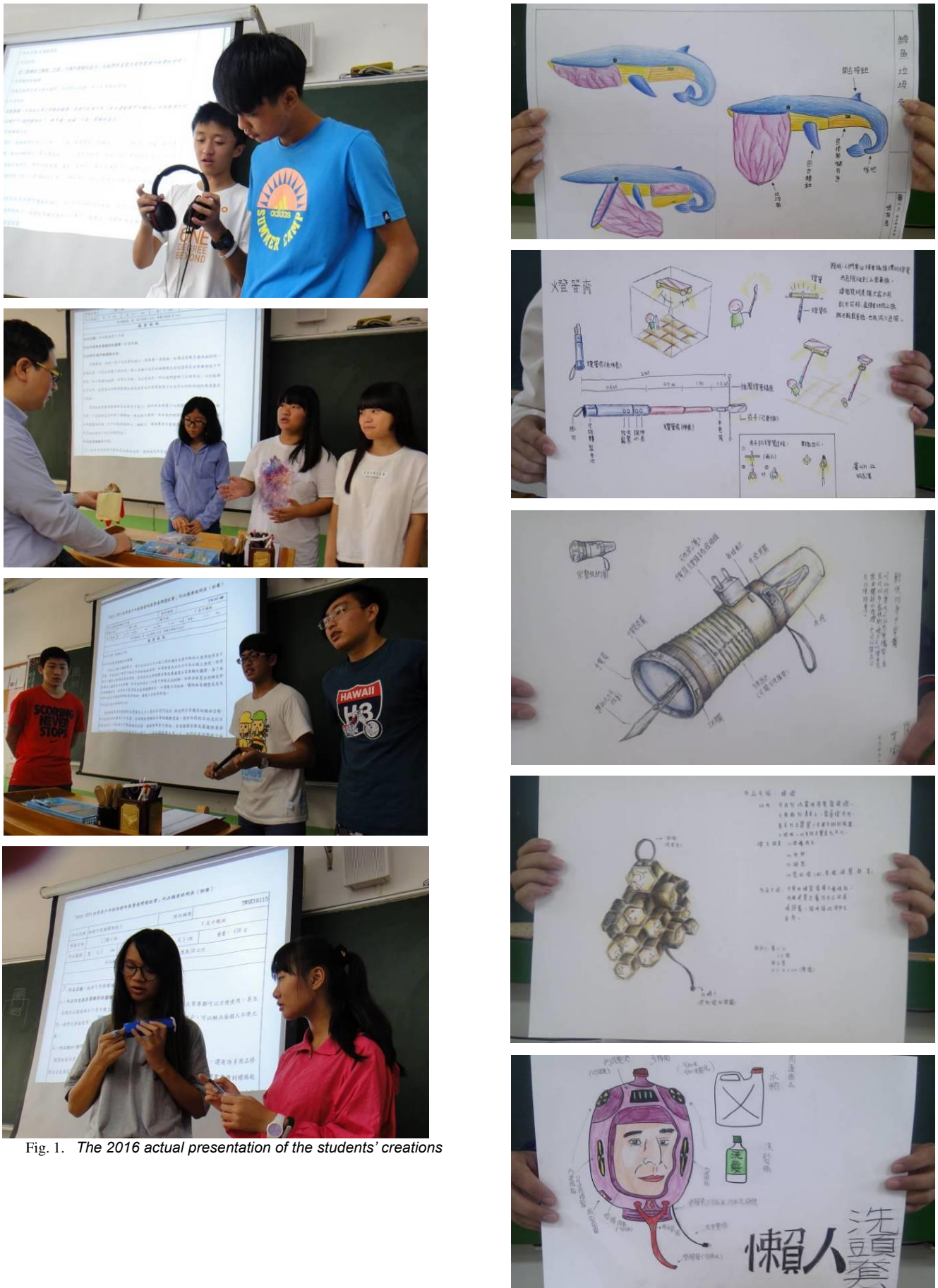


Fig. 1. The 2016 actual presentation of the students' creations



Fig. 2. The exhibition of their comparatively better works

## V. CONCLUSIONS

In general, the results for the innovative research and development of this study are summarized and illustrated below:

- (1) If it is feared that one's creative idea is similar to others, a patent search can be conducted in the intellectual property office website and design around a patent can be proposed.

- (2) Production of models, posters, DMs, and short films must be refined. It would be better if on-scene simulation can be done.
- (3) Oral report must be presented smoothly and concisely. The best way to face questions raised by the reviewers is to be calm.
- (4) Producing creative inventions from environmentally friendly, energy saving, emergency rescue, and other social viewpoints makes it easier for inventors to receive awards.

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