



# Social Interaction and Students' Perception of Entrepreneurship in the Context of Authentic Enterprise Exposures

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**Abstract.** In researching entrepreneurship education, more attention needs to be given to exploring the educational context and processes involved. With this focus, this study aims to answer two research questions: firstly, do students become more receptive to entrepreneurship after participating in an authentic entrepreneurship education activity, and secondly, how does social interaction within such an activity affect students' perception of entrepreneurship? Using a pre- and post-test method, data were collected from high school students who had participated in an entrepreneurship education activity in Hong Kong which emphasised exposure to authentic enterprise by means of generating a business idea, writing up a business plan, interacting with various business stakeholders and engaging in real trading. The findings suggest that an authentic entrepreneurship education activity should give students the chance to experience the reality of entrepreneurship, particularly the difficulties they are likely to face. This can help them to develop a realistic and wise insight into their choice of an entrepreneurial career. Moreover, it is necessary to maximize students' opportunities for social interaction with the various parties involved throughout entrepreneurship education activities so that a more positive learning experience can be gained.

**Keywords:** students' perception, entrepreneurship, entrepreneurship education, authentic entrepreneurship education activity, social interaction.

## 1. Introduction

Interest in entrepreneurship education has grown rapidly over the past two decades (Garavan and O'Conneide, 1994; Gibb, 1997; Hytti and O'Gorman, 2004; Jamieson, 1984). Many studies have advocated the use of constructivist, learner-centred approaches in entrepreneurship education, incorporating team-based, authentic learning activities (Gibb, 1997; Johnson et al., 1987; Lewis and Massey, 2003). It is generally believed that students' participation in such activities will give them a real-life or authentic exposure to the experience of starting and running their business in a team, so that they can feel the excitement of doing so and gain first-hand experience of entrepreneurship. Consequently, such an experience will have a positive impact on participants' attitudes towards entrepreneurship. However, Pittaway and Cope (2006) recently report that such a

view is still inclusive and often too simplistic because of a lack of attention to the influence of the educational context and process throughout entrepreneurship education.

One aspect of this influence is the various types of social interaction experienced during learning activities, such as the development of mutual understanding, encouragement, sharing and the making of suggestions by different supporters (Collins and Robertson, 2003; Lewis and Massey, 2003; Schelfhout, Dochy and Janssens, 2004). Although it is believed that such social interaction is critical in the entrepreneurial learning process (Boussouara and Deakins, 1999; Gibb, 1997), further empirical work is required to examine how such interactive processes contribute to effective entrepreneurship education.

The main purpose of this study is therefore to investigate the role of social interaction in the formation of students' entrepreneurial attitudes during their participation in an authentic education activity which is called the Teen Entrepreneurs Competition (TEC). Specifically, the two research questions are: firstly, do participants become more receptive towards entrepreneurship after participating in an authentic education activity and secondly, how does the social interaction which takes place during such an experience affect the participants' perceptions of entrepreneurship?

The following sections explain how a set of hypotheses was developed through a literature review of the conceptual basis of entrepreneurship education and social interaction. In the light of the research questions, the literature review and subsequent hypotheses are focused on two issues: firstly, the effect of authentic exposure to enterprise on students' perceptions of entrepreneurship; and secondly, how closely social interaction is connected to the formation of such views. We then report the findings of an empirical study of these hypotheses through a pre- and post-test method using questionnaire surveys of high school students who had participated in an authentic entrepreneurship education activity in Hong Kong. The findings are then discussed and a series of recommendations made for the future provision of entrepreneurship education and areas for further study.

## **2. Conceptual Background and Hypotheses**

### **2.1. Nature and Effectiveness of Entrepreneurship Education**

There has been a growing interest in entrepreneurship education in the past few decades (Jamieson, 1984; Garavan and O'Conneide, 1994; Hytti and O'Gorman, 2004). While it is generally believed that the main purpose of such education is to foster entrepreneurship, there are in fact different views regarding its nature in relation to its purpose. Broadly speaking, entrepreneurship education is

considered as a multi-faceted form of learning, with three distinctive purposes conceived from different viewpoints; firstly, an education for entrepreneurship to develop the various skills and awareness needed in setting up a business; secondly, an education about entrepreneurship which provides an understanding of the entrepreneurial process; and thirdly, an education through entrepreneurship by making it a platform for an extended learning purpose with a broader scope (Iredale, 2002; Jamieson, 1984; Lewis and Massey, 2003; Scott, Rosa and Klandt, 1998). Various approaches to achieving these purposes are possible, resulting in different delivery modes. Those who participate in such activities also vary, ranging from primary to graduate students and from the general public to specific groups. Such diversity in the nature and purpose of entrepreneurship education, and in those who take part, has made the measurement of its effectiveness a significant challenge.

Even with such multiple views of the purpose and actions of entrepreneurship education, there is a general impression that its activities can have a positive impact on entrepreneurship. This is supported by a number of prior reviews and studies in this field. For example, in the literature review on the provision of entrepreneurship education conducted by Gorman, Hanlon and King (1997), entrepreneurial attributes are found to be positively influenced by educational programmes and activities through building an awareness of entrepreneurship as a career option and encouraging favourable attitudes towards it. Another review by Henry (2000) also shows evidence to support the existence of a positive relationship between entrepreneurship education and new business creation. He further suggests that such a relationship is subject to the provision of an enabling environment, raising a stronger sense of awareness, making entrepreneurship courses sufficiently attractive, encouraging real-life selling and adopting an authentic approach to teaching. Charney and Libecap (2003) report on a more extensive range of contributions made by entrepreneurship education, including forming entrepreneurial characteristics, creating new ventures, earning higher income and acquiring more assets, having a higher level of job satisfaction, expanding firm size and promoting technology transfer. Given that entrepreneurship education has a diverse range of antecedents and impacts, evaluation of its effectiveness should go beyond looking at traditional business start-up measures, and also consider individual and contextual factors (Lee, 2005).

In all the measures for evaluating the effectiveness of entrepreneurship education, a common issue has been addressed, irrespective of the type of participants involved is whether or not participation causes the participant to become more entrepreneurial. This issue is usually examined by looking at changes in the participants' entrepreneurial attributes (see for example Hindle and Cutting, 2002; Kolvereid and Moen, 1997; Osborne, Falcone and Nagendra, 2000; Rasheed and Rasheed, 2004), or their perceptions of or intentions towards entrepreneurship (see for example Alsos, Isaksen and Softing, 2006; Fayolle,

Gailly and Lassas-Clerc, 2006; Peterman and Kennedy, 2003). Based on a systematic literature review of the literature on entrepreneurship education, Pittaway and Cope (2006) argue that it does have an impact on students' propensity and intentionality towards entrepreneurship. However, they also point out that this measurement of attitude changes remains a simplistic view because there are cultural, legal and economic barriers to acting on those attitudes in practice.

In fact, there is contrasting evidence for the impact of entrepreneurship education on perceptions of entrepreneurship. In Lewis's (2005) survey of participants in one education activity in New Zealand, almost half did not indicate a desire to be self-employed in the future after having completed the programme. Audet (2001) also reports that although participants' perception of the feasibility of starting their own business might increase after taking an entrepreneurship class, their desire to do so might not have changed significantly, or may have actually decreased. Similar findings are reported by Paasio and Hytti (2006) in studying the impact of an entrepreneurship programme for PhD students. Such findings contradict those of Peterman and Kennedy (2003), who provide empirical evidence for the positive impact of participation on students' perceptions of both the desirability and feasibility of entrepreneurship. Paasio and Hytti (2006) explain that an increased sense of feasibility may be attributable to enhancement of the skills required for, and knowledge about, starting up and running a business. On the other hand, participants might start out with a rather idealistic vision of entrepreneurship but then see it replaced by the reality of being surrounded by the problems and difficulties involved in starting one's own business (Audet, 2001). As a result, their original assumptions about self-employment may be proved or disproved (Lewis, 2005), leading to inconclusive findings about the impact of participants' perceptions of, and intentions towards, entrepreneurship.

We suggest that the underlying reason for such inconsistency is due to the fact that the teaching and learning approaches adopted in the entrepreneurship education activities studied vary substantially (Hytti and O'Gorman, 2004; Pittaway and Cope, 2006). Although there is a general agreement about the increasing adaptation of an experiential, action learning approach to entrepreneurship education (Cooper, Bottomley and Gordon, 2004; Gibb, 1997; Heinoen and Poikkijoki, 2006; Solomon, Weaver and Fernald, 1994), it is still not known to what extent those learning experiences offer students practical elements in terms of knowledge provision and skill development, as well as authentic elements like real trading exposure and responsibility for profit and loss. These elements have an important effect on the formation of participants' perceptions of entrepreneurship but may have a contrasting impact on them.

Based on the above, we argue that participating in an entrepreneurship education activity in an authentic, experiential context will allow students to develop the skills and knowledge relevant to starting and running their own

business, resulting in a more realistic perception of entrepreneurship. However, at the same time, they will encounter these realities through authentic exposure to real trading activities, particularly the problems and difficulties of running a small business, so that they will consider entrepreneurship to be a less desirable career option. Therefore, the following two hypotheses are proposed:

H1. Students' perception of the feasibility of entrepreneurship will increase after participating in an authentic activity.

H2. Students' perception of the desirability of entrepreneurship will decrease after participating in an authentic activity.

## 2.2. Roles of Social Interaction in Entrepreneurship Education

The above hypotheses attempt to explain the influence of the authentic context on students' perceptions of entrepreneurship. A further issue arising from this is whether or not some will students perceive entrepreneurship more favourably than others when they participate in the same activity. This is no doubt that this phenomenon will arise given that there is human involvement. In the following section, we shall explain that such a difference can be attributed to the presence of social interaction throughout a learning activity.

In education, teachers may place students and their social environment as the departure point of teaching and learning so as to allow students to construct knowledge by themselves and through social interaction with others (Doolittle and Camp, 1999). Such interaction often occurs in small social units and in the form of face-to-face interaction, in which participants recognize each other in the process of learning (Vanderstraeten, 2004).

According to Strangor, Sechrist and Jost (2001), the social influence on interaction occurs in three dimensions. Firstly, it allows information sharing and validation, giving members of the social unit a feeling of certainty or confidence. Secondly, it influences the formation of an individual identification or affiliation with the social unit. Thirdly, it helps to build a stronger societal outcome by increasing the sharing of beliefs and a sense of similarity through increased confidence in the common belief. Social interaction helps students to share their different insights and reasoning process, discover weak points in their reasoning, correct one another and adjust their understanding on the basis of that of others (Yu, 1996). Therefore, through social interaction, participants act in different ways in response to the stimuli generated within the social unit so that their learning experience is enhanced.

Social interaction in entrepreneurship education appears in a much more extensive context. The availability of mentors, coaches or advisors is often believed to be one of the key factors in the smooth delivery of entrepreneurship

education, and so successful learning in these activities is dependent on their provision and facilitation of concern, support, interaction and encouragement (Collins and Robertson, 2003; Garavan and O'Connell, 1994; Hytti and O'Gorman, 2004; Lewis and Massey, 2003; Schelfhout et al., 2004). For example, in examining the effectiveness of an entrepreneurship education activity, Lewis and Massey (2003) show that the role of school teachers is crucial in "determining the characteristics of the learning environment conducive to the delivery of an enterprise experience that will have the maximum impact", and through their "enthusiasm and the ability to motivate students" (p. 203). Moreover, the role of mentors in the programme is not always of a technical nature and will be more effective if they "had empathy for working with young people" (p. 204).

In fact, the importance of social interaction is also noticeable in the development of entrepreneurs, particularly at the new and early stages (Sullivan, 2000; Boussoara and Deakins, 1999). For example, Sullivan (2000) identifies a psychological function for mentors of new and early stage entrepreneurs, in addition to their role of providing skills and knowledge. It is also shown that the quality of social interaction within the entrepreneurial team – exemplified as levels of communication, coordination, mutual support, norms, cohesion and internal conflict resolution – is a key determinant of its success (Lechler, 2001). Ulhoi (2005) further proposes that entrepreneurial activities are in fact the results of social interaction and mechanisms, and so the social network should incorporate personal and business networks as well as an institutional and social environment.

It is clear that a positive experience obtained through social interaction is an essential element of participation in entrepreneurship education. This has also been noted in actual start-up and entrepreneurial development work. As a result, our general proposition is that social interaction is a critical component of entrepreneurial development, and entrepreneurship education should have a positive impact on the formation of participants' perceptions of the concept. However, it seems that such an impact is exerted through building a positive attitude to, or perception of, entrepreneurship education. In fact, this is in line with the perspective that the positive nature of prior entrepreneurial exposure will influence the formation of perceptions of entrepreneurship (Krueger, 1993; Peterman and Kennedy, 2003). However, we assert that current experience during entrepreneurship education is also critical.

Based on the above, we propose that social interaction produces its effect on the students' perception of entrepreneurship through the development of a positive sense of affection for the educational activity. Therefore, we propose the following two hypotheses:

H3. Students' affection for an authentic entrepreneurship education activity will mediate the effect of social interaction on changes in their perception of the feasibility of entrepreneurship before and after participating in this activity.

H4. Students' affection for an authentic entrepreneurship education activity will mediate the effect of social interaction on changes in their perception of the desirability of entrepreneurship before and after participating in this activity.

### **3. Methods**

To test the above hypotheses, a quantitative approach with pre- and post-test questionnaire surveys was adopted in our empirical study. The variables, sample, data collection procedures and methods of analysis are explained in the following sections.

#### **3.1. Variables**

The two dependent variables were the changes in the participants' perceived feasibility and desirability of entrepreneurship, adopted as in taken from Krueger (1993). Perceived feasibility and desirability were measured by five and three items respectively, both presented in the form of a seven-point Likert scale. Respondents were asked to rate the items with respect to starting a business. Example items include: "How certain of success are you?" (measuring perceived feasibility) and "How enthusiastic would you be?" (measuring perceived desirability). The Cronbach's alpha coefficients of the original instruments were 0.57 and 0.77 respectively. Peterman and Kennedy (2003) report the coefficients as 0.66 and 0.77. We found them to be 0.61 and 0.88. These differences probably arose due to cultural differences between our respondents and those in prior studies conducted in the Western context.

The independent variables were the four main types of interaction taking place throughout the entrepreneurship education activity; namely (1) with team members, (2) with the activity facilitator, (3) with the school teacher and (4) with business stakeholders. They represent the four types of interaction found in the authentic entrepreneurship education activity deployed in this empirical study, as explained in the Sample and Data Collection section which follows. Interaction with team members was measured using a modified form of student's affiliation scale of the Adult Classroom Environment Scale (ACES) developed by Darkenwald and Valentine (1986). It contains seven items used for measuring the extent to which students like and interact positively with each other (such as "We work well together"), with a reported Cronbach's alpha of 0.74. The interactions with both activity facilitators and the school teacher were measured using seven-

item instruments adapted from the Teacher Support scale within the ACES. This was used to measure the extent of the help, encouragement, concern and friendship the teacher or facilitator directed towards students (such as “The school teacher/facilitator has made every effort to help us succeed”). The original Cronbach’s alpha was 0.80. The scale used to measure interaction with business stakeholders was modified from a composite instrument of Yli-Renko, Autio and Sapienza (2001) used to measure social interaction and customer network ties. It contained four (modified) items to measure the degree of participants’ interaction with various business persons, such as suppliers and customers, during their involvement in the venture (such as “During TEC, I always sought advice from people other than my classmates, school teacher and TEC facilitator”). In the original scales, the average reliability coefficient was 0.79. The coefficients for the four social interaction variables in our current study were 0.86, 0.94, 0.93 and 0.74 respectively.

A mediating variable – students’ affection for the entrepreneurship education activity – was also introduced. It was measured by a four-item instrument in which students were asked to rate their agreement on a five-point scale with statements about how much they had liked the entrepreneurship education activity and their experience with it. The scale was modified from an instrument developed by Chin, Mok and Chung (2004) about students’ affection for a particular course after studying it, and the four items used here covered students’ liking, enjoyment, feeling of excitement and expectations of further (that is, repeated) participation in the activity. Its Cronbach’s alpha was 0.85 in the original scale and 0.87 in the current study.

Three control variables were also introduced, covering the participant’s family entrepreneurial experience, their own prior learning in business education and their previous exposure to entrepreneurship education. These were introduced because such experiences might influence views of and exposure to entrepreneurship and subsequently have an impact on the formation of perceptions of the current activity; this influence therefore needed to be controlled. These were measured using dichotomous items (yes or no answers) in the questionnaire.

### 3.2. Sample and Data Collection

The sample of the study was high school students who had participated in the TEC, an annual authentic entrepreneurship education activity which has been organised in Hong Kong since 2003. It is action-oriented, experiential, authentic and collaborative in nature. The participants formed teams of up to ten members. Over a four-month period, the teams were required to generate business ideas, write up business plans and turn their business plans into real businesses by setting up for actual trading over a two-day weekend in the setting of a Chinese

New Year Fair. Throughout the TEC, the participants had to work in teams under the guidance of a facilitator provided by the organiser and their own school teacher. They also had to deal with various other parties throughout, including suppliers, shareholders (other students or teachers in their schools) and customers. Moreover, they had to bear the risk of actual financial loss if they failed to make a profit over the two market days. These are the reasons why experiential, authentic and interactive elements were heavily emphasised throughout the TEC. Such experiences closely resemble the real process of starting a small business and are considered critical in affecting students' perceptions of entrepreneurship.

The high school students had joined the TEC for various reasons, including a desire to be part of the required learning experience for their business studies classes and as an extra-curricular activity over the Chinese New Year. Their participation may have been either teacher-initiated or voluntary. However, all the teams had to be endorsed by their schools. As the participants had been recruited from different schools with a diverse background throughout Hong Kong, the problem of selection bias should be minimal.

The data were collected through a pre- and post-test method, with the use of two identical questionnaire surveys distributed to all 480 TEC participants before and after the competition over a four-month period from late 2005 to early 2006. A total of 234 and 304 questionnaires were returned and completed, representing response rates of 49% and 63.3% on the pre- and post-test respectively.

### 3.3. Methods of Analysis

We first made use of descriptive statistics to obtain a general understanding of the data. To test Hypotheses 1 and 2, paired-samples t-tests were used to test for any significant differences on perceived feasibility and desirability before and after participation. To test Hypotheses 3 and 4, we firstly used correlation analysis of the independent, dependent and mediating variables. We then developed different linear regression models for analysis. In Model 1, affection for the entrepreneurship education activity was tested with the four variables of social interaction. In Models 2a and 2b, perceived feasibility and desirability were tested with affection. Additional regression equations for Models 3a and 3b were also developed, in which perceived feasibility and desirability were tested directly with the four variables of social interaction. Finally, in the regression equations of Models 4a and 4b, perceived feasibility and desirability were tested directly with affection and all four social interaction variables together. By comparing these regression equations, it is possible to identify the strength of the mediating effect of affection for the entrepreneurship education activity as compared with the direct effect of social interaction on perceived feasibility and desirability. The three control variables were entered in the regression models as dummy variables.

#### 4. Results

The average age of respondents was 16.8 and the male to female ratio was 3:7. In terms of education experience, most were in Secondary 4 or 6, and 60.8% had studied business or related subjects before. These sample characteristics match the general characteristics of high school students who study commerce in Hong Kong. However, relatively few respondents (5.6%) had participated in other entrepreneurship education activities before. On the other hand, 17.9% reported that their family members owned and ran businesses.

The number of matched pairs for the variables of perceived feasibility and desirability before and after the TEC was 143 and 144 respectively. The number of matched pairs is smaller than the total number of respondents in the pre- and post-test surveys because some did not give their student number on the questionnaires and so could not be matched. Based on the matched sample, changes before and after the TEC are shown in Table 1 below, which indicates an increase in perceived feasibility and a decrease in perceived desirability.

*Table 1: Change of Means Before and After TEC*

	Before TEC	After TEC	Mean Difference	S.D.	Paired-Samples t-Test (t value)
Perceived Feasibility	3.906	4.102	.196	.616	-3.801**
Perceived Desirability	5.771	5.572	-.199	.945	2.529*

\*\*Significant at the .01 level.

\*Significant at the .05 level.

More importantly, the results of paired-samples t-tests also show that students' perception of the feasibility of entrepreneurship increased significantly after participating in the TEC. On the other hand, desirability significantly decreased. Therefore, Hypotheses 1 and 2 are supported.

To test Hypotheses 3 and 4, we first conducted a correlation analysis of the dependent, mediating and independent variables. The results are shown in Table 2 below.

From Table 2, it can be seen that there were significant correlations between all four types of social interaction and affection for the entrepreneurship education activity. The interaction effect of the latter also correlated significantly with changes in perceived feasibility and desirability. On the other hand, the correlations between the social interaction variables and the changes in perceived feasibility and desirability were weaker, with only interaction with team members correlating significantly with both types of change, and interaction with teacher correlating with perceived desirability. In summary, these findings provide preliminary support for Hypotheses 3 and 4, which highlight the mediating role of affection for the entrepreneurship education activity on the relationships

between social interaction and changes in the perceived feasibility and desirability of entrepreneurship.

Table 2: Results of Correlation Analysis

	Mean	S.D.	1	2	3	4	5	6	7
Change in Perceived Feasibility	.196	.616	1						
Change in Perceived Desirability	-.199	.945	.384**	1					
Interaction with Team Members	3.600	.652	.193*	.249**	1				
Interaction with Facilitator	3.470	.898	.135	.074	.317**	1			
Interaction with School Teacher	3.883	.728	-.015	.256**	.181**	.107	1		
Interaction with Business Stakeholders	2.842	.776	.121	-.048	.221**	.217**	.198**	1	
Affection for Entrepreneurship Education Activity	3.738	.690	.165*	.384**	.485**	.334**	.241**	.181**	1

\*\*Significant at the .01 level.

\*Significant at the .05 level.

To provide further evidence for these two hypotheses, regression models were developed and tested. Using a hierarchical regression approach, the control variables were first introduced in each model, followed by the main effects to be tested. The findings are shown in Table 3 below.

The results show that there was an overall significant regression equation for Model 1 with affection for entrepreneurship education activity as the dependent variable, resulting in a significant  $R^2$  of 0.306 (adjusted  $R^2 = 0.287$ ) on the final model. Significant and positive effects were also found for three out of the four social interaction variables. The coefficients and the analysis of the change in  $R^2$  also showed that these social interaction variables played a significant role as independent variables in the regression model.

In Models 2a and 2b, where changes in perceived feasibility and desirability were used as the dependent variables, significant effects were also noted for affection as the independent variable in both models. As shown in Model 2b, there was a moderately significant  $R^2$  of .182 (adjusted  $R^2 = 0.157$ ), whereas in Model 2a, the  $R^2$  was as small as 0.056 (adjusted  $R^2 = 0.027$ ). These findings suggest that affection has a greater positive impact on the change in perception of desirability than it does on feasibility.

Table 3: Results of Hierarchical Regressions

Model	1		2a		2b		3a		3b		4a		4b	
Dependent variable	Affection for Entrepreneurship Education Activity		Change in Perceived Feasibility		Change in Perceived Desirability		Change in Perceived Feasibility		Change in Perceived Desirability		Change in Perceived Feasibility		Change in Perceived Desirability	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 2 <sup>#</sup>	Step 2 <sup>#</sup>	Step 2 <sup>#</sup>	Step 2 <sup>#</sup>	Step 2 <sup>#</sup>	Step 2 <sup>#</sup>	Step 2 <sup>#</sup>	Step 2 <sup>#</sup>
<b>Control Variables</b>														
Family's entrepreneurial experience	.030	.023	-.155*	-.160*	-.171*	-.183*	-.146*	-.197*	-.149*	-.149*	-.205**			
Prior Learning in Business Education	.084	.072	-.016	-.031	.013	-.020	-.012	-.009	-.019	-.019	-.033			
Prior Exposure to Entrepreneurship Education Activity	-.072	-.085	.031	.044	-.009	.020	.025	-.014	.033	.033	.015			
<b>Independent Variables</b>														
Interaction with Team Members		.410**					.151	.223*	.110	.110	.082			
Interaction with Facilitator		.174**					.085	.017	.067	.067	-.043			
Interaction with School Teacher		.129*					-.047	.269**	-.060	-.060	.225**			
Interaction with Business Stakeholders		.026					.076	-.156	.074	.074	-.165*			
Affection for Entrepreneurship Education Activity				.176*		.393**			.099	.099	.345**			
$\Delta R^2$		.292		.031		.152	.049	.138	.056	.056	.221			
R <sup>2</sup>	.014	.306	.025	.056	.029	.182	.074	.167	.081	.081	.250			
Adjusted R <sup>2</sup>	.002	.287	.003	.027	.008	.157	.024	.122	.023	.023	.203			
F	1.204	16.132**	1.139	1.942*	1.344	7.320**	1.471	3.701**	1.405	1.405	5.324**			

\*\*Significant at the .01 level.

\*Significant at the .05 level.

# Only Step 2 was shown in these models as Step 1 is the same as in Models 2a and 2b respectively.

In Model 3b, it can be seen that only two of the four social interaction variables – interaction with team members and the school teacher – were significant and had a direct impact on the change in perceived desirability, with adjusted  $R^2 = 0.122$ . Moreover, none of these four social interaction variables had a significant effect on the change in perceived feasibility, as shown in Model 3a.

In Model 4b, the direct effect of affection and two of the four social interaction variables (interaction with school teacher and business stakeholders) were found to be significant to the change in perception of desirability, with adjusted  $R^2 = 0.203$ . On the other hand, none of these independent variables had a significant effect on the change in perceived feasibility, as shown in Model 4a.

When considering the results of Models 1 and 2b together, it is notable that social interaction – particularly with team members – has a relatively strong impact on affection for the entrepreneurship education activity, which in turn has a fairly significant effect on the change in perceived desirability. These linked

relationships also have greater  $R^2$  and F values than those in Model 3b, which proposed a direct relationship between social interaction and the change in perception of desirability. In Model 4b, while the direct effects of the two social interaction variables are significant, affection still has the highest coefficient, and it should contribute more significantly towards  $R^2$  compared with Model 3b. Therefore, Hypothesis 4 is supported, with empirical evidence for affection for the activity having at least a partial mediating effect between social interaction and change in perception of desirability. In particular, the high level of significance of social interaction with team members in Model 1, together with the change in status of this variable from significant to insignificant between Models 3b and 4b, indicates that affection has a particularly strong mediating effect on the relationship between social interaction with team members and changes in the perception of desirability.

On the other hand, although there is a slightly significant coefficient for affection on change in perceived feasibility in Model 2a, the small  $R^2$  shows that this could only explain a small fraction of the variance, and is a finding without much practical significance. Moreover, even though social interaction is shown to have an effect on affection, as revealed in Model 1, neither of these variables affects the change in perceived feasibility, as shown in the insignificant Models 3a and 4a. Therefore, Hypothesis 3 cannot be supported.

Moreover, of the three control variables, only the family's entrepreneurial experience was found to have a significant and negative effect on changes in perceived feasibility and desirability. This may be attributable to the fact that the participants with a family background in entrepreneurship might originally have had a rather positive attitude towards it, consistent with many previous studies which show that the positive impact of such a family experience serves as a role model in affecting attitudes towards entrepreneurship (see for example Harris and Gibson, 2008; Mathews and Moser, 1996; Wang and Wong, 2004). However, such a positive attitude might also shift in the opposite direction, as participants tended to form a more realistic yet unfavourable perception of entrepreneurship after their first-hand experience through the TEC. Therefore, negative coefficients on this control variable were reported.

## 5. Discussion and Conclusion

In this study, we have shown that students who participated in an authentic entrepreneurship education activity, the TEC, considered entrepreneurship to be simultaneously a more feasible and less desirable career option. This can be explained by the fact that the students developed a better knowledge of the realities of entrepreneurship by acquiring the skills and information required to launch and run a small business while at the same time encountering difficulties and failures in doing so. These findings correspond to those of Audet (2001) and

Paasio and Hytti (2006), and we further suggest that they are connected to the presence of an authentic experience as provided by the entrepreneurship education activity in this study. As a highly authentic learning experience, requiring students to perform business planning, capital raising, dealing with suppliers and customers and bearing the risk of potential gains and losses, the TEC provided an opportunity for students to engage in real-life business activities. However, there is no guarantee that such experiences would always be viewed favourably by participants. In fact, we believe that this 'no guarantee' risk presents the possible risk of entrepreneurship. Participants should not miss out on this essence of entrepreneurship throughout their educational activities.

Moreover, even though the average perceived desirability of entrepreneurship had reduced after the TEC, the results show that it is still likely to increase in the presence of social interaction, particularly with other team members. A slight negative effect is also produced by social interaction with business stakeholders, which is probably attributable to the authentic experience of facing them, as explained above. More importantly, the relationship between social interaction and change in the perception of desirability became even stronger when students developed a positive affection for the activity after participation. A possible explanation for this is that the creation of a positive learning experience throughout the activity can compensate for the unfavourable feelings which develop as a result of difficulties or problems encountered. Moreover, as both perceived desirability and affection for the activity are related to students' feelings, they are more likely to be positively correlated.

On the other hand, the insignificant direct effect of social interaction and the mediating effect of affection for the activity on perceived feasibility are both probably due to the fact that the latter is rooted in the possession of skills and knowledge. As a result, simply having a positive feeling of affection may not have a strong impact on the perception of feasibility. Therefore, it is recommended that participants should build up the skills and knowledge required to run a business through an ongoing developmental process of entrepreneurship education.

The findings show that it is necessary for participants to have a sufficient level of social interaction with various parties throughout the activity. They can then obtain a fruitful information exchange, develop positive affiliation with other group members and form shared beliefs as well as developing confidence in such beliefs (Strangor, Sechrist and Jost, 2001). This is achieved with the support of team members and other people, as has been identified in prior studies of entrepreneurship education (see for example, Collins and Robertson, 2003; Garavan and O'Cinneide, 1994; Hytti and O'Gorman, 2004; Lewis and Massey, 2003; Schelthout et al., 2004). As a result, students consider the entrepreneurship education activity to be a meaningful learning experience, which explains the positive mediating role of affection for it.

With the above-described recognition of the importance of social interaction in the process of learning, the findings imply that it is necessary to maximize

participants' opportunities to interact with various parties when designing appropriate education programmes. Nevertheless, an authentic entrepreneurship education activity should also allow students to recognise the realities of such work, including the difficulties they will face in starting their own business, so that they can have a heightened awareness of what being self-employed actually means (Lewis, 2005). As a result, they can develop a realistic and wise insight into their choice of an entrepreneurial career in future.

There are a few areas in which improvements can be made. Firstly, although an existing set of validated measurements were used in this study, the Cronbach's alpha for perceived desirability was only moderate and so the reliability of this variable was less high. This may be attributed to the differentiated understanding of the meanings of the items when applied to the sample of Chinese high school students in this study. A further modification of this measurement will be necessary for further studies in similar contexts. Secondly, although we have highlighted the importance of social interaction in this study, it is still necessary to explore in depth the nature and forms such interactions can take. As a result, further qualitative studies of this aspect are recommended. Thirdly, we have highlighted the importance of authenticity in the formation of perceptions of entrepreneurship throughout education activities. This is an area which is worthy of further investigation, as currently there is a lack of empirical studies focusing specifically on this issue. Finally, as risk has also been identified as an important element associated with students' authentic exposure, the effect of their attitudes towards risk should also be controlled for in further studies.

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