



GENERAL EDUCATION COURSES INTEGRATED WITH CHARACTER DEVELOPMENT ACTIVITIES: EFFECTIVENESS ON THE CHARACTER DEVELOPMENT OF UNIVERSITY STUDENTS

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Abstract

With a conviction that general education should play a significant role in fostering the positive development of university students' character, several educators integrated various activities that could contribute to such development into general education courses in a technical university in Taiwan. This study surveyed the takers and non-takers of those courses and compared the differences in the scores of eight aspects of character development between the two groups of students. Results revealed that the implemented courses brought up small gains, particularly for male students in the second year, in most of the aspects including "logic and innovation," "social practices," "citizenship," "growth in learning," and "proactiveness and autonomy." Female students were found to score significantly higher than male counterparts in all of the aspects and the scores of most aspects exhibited a declining trend with the increasing university years. These results were discussed from the perspectives of the teaching strategies advantageous for character development as well as the mental difference between first-year and third- or fourth-year students.

Keywords: *general education, character development, quasi-experiment, teaching strategies*

Introduction

As a major channel through which a whole person educational ideal is realized, general education courses should wield pervasive and sustained influences on the character development of university students. Sternberg (2013) argued that the greatest contribution to character development may be made by these courses. Character development can be enhanced by participating in diverse educationally purposeful activities (Kuh & Umbach, 2004), viewing character development as an outcome of all the learning processes in a university (Cole, 2004) is of paramount importance in promoting positive development of character for undergraduate students. Successful cases, for instance, the institutions of Lamb et al. (2022) and Larson and Martin (2009), demonstrated that with inputs of efforts and employment of effective strategies educators were able to bring about growth in character development in university students.

Despite that general education programs in universities "must continue to be concerned about our students' character development" (Dahlin & Abbott, 1999, p. 207), the role of general education courses in enhancing the character development of university students seems not to receive sufficient attention in empirical studies. Yet, some studies contribute to the strategies (e.g., Lamb et al., 2022) and types of activities (e.g., Kuh & Umbach, 2004) that are beneficial for character cultivation in university students, being informative to the planning of teaching

and analysis of the outcomes for general education courses. Besides, a more fundamental issue that is rarely addressed in relevant studies is the influence of student demographic variables such as gender and university year in assessing the effectiveness of the interventions of character development. This deserves closer examination and might be implicative for fine-tuning the educational efforts of character development in universities.

General education does far more than instill general knowledge of the world into students; it inspires students to learn to be a complete individual as well as a responsible citizen through a variety of learning activities. The belief echoes what Kuh and Umbach (2004) emphasized that character cannot be taught in one course and its multiple dimensions are cultivated through various experiences. With an attempt to foster the positive development of student character in the implementation of a project subsidized by the Ministry of Education, eight full-time faculty of the Center for General Education at a technical university in Taiwan planned a variety of teaching activities in which the students who took their general education courses were engaged. These activities have been held in more than 30 courses in the past semesters and are themed around topics in a number of fields such as globalization, sustainability, law, philosophy, and arts, aiming to positively affect the character development of students. Examples include, to name a few, a professor of the course Introduction to Environmental Science guiding students to make compost and grow organic vegetables, a professor leading students to create and exhibit artworks sending messages for a better world in her course Creative Thinking and Design, and students in the course Philosophy and Life interviewing entrepreneurs about their life stories. The investment of budget and efforts in the teaching activities over these semesters entails a systematic analysis on the outcomes of these general education courses integrated with character development. In specific, the analysis of this study aimed to answer the following questions:

1. Were there significant differences in the scores of character development between the students who did not take the general education courses integrated with character development and those who used to take such courses? (Did the takers of these courses score significantly higher in character development than the non-takers of these courses?)
2. On what aspects of character development did the general education courses integrate with character development have effects? (In what aspect did the takers of these courses score significantly higher than the non-takers of these courses?)
3. Were there significant gender and university year differences in the score of each aspect of character development?

Research Methodology

Research Design

This study adopted one of the categories of quasi-experimental designs in which an experimental group and a control group were included but no pre-test due to the impracticability of maintaining the same classes of students participating in both pre-test and post-test over a considerable period longer than a semester for character to develop. In the semesters before the online survey, eight professors of the Center for General Education, an institute in charge of offering and teaching undergraduate general education courses at the university of this study, had planned and integrated different forms of activities that could contribute to the character development of students into the general education courses they taught. There were totally 470 students who used to take those courses and they were categorized into the experimental group. Whereas the classes of students of the courses taught by other teachers, 413 students in total, were categorized into the control group since these courses were not integrated with those character development activities. This group of students were non-takers of the courses integrated with character development.

Participants

At the end of the spring semester in 2022, a convenience sample with a total of 883 students (470 in the experimental group and 413 in the control group) participated in an online survey to be tested with a character development scale. Due to the gender composition of the university under study, most of them (78.8%) were males. By university years, 142 (16.1%) were first-year, 416 (47.1%) second-year, 242 (27.4%) third-year, and 76 (8.6%) fourth-year students (with seven unknown). No personally identifiable information was collected in the online survey to ensure anonymity and the students were told that they were free to join the survey which was irrelevant to their grades.

Instrument

Five educational experts experienced in character development research were consulted to devise a scale of character development, to some extent ensuring some content validity of the scale. With an estimate of internal consistency reliability (Cronbach's α) of .852, suggesting that the scale was reliable, its content was polished considering the opinions of participant professors about its comprehensibility to their students. The finalized scale consists of eight aspects: friendliness and empathy, logic and innovation, teamwork, social practice, citizenship, growth in learning, proactiveness and autonomy, and art and cultural content, each with six questions in a dichotomous format, summing to 48 questions. One of the questions as an example in each aspect is as follows.

1. Friendliness and empathy:
When I see a friend in a bad mood,
A. I don't know what to do and how to talk to him or her.
B. I will accompany him or her and wait in patience until he or she is willing to tell me what happened.
2. Logic and innovation:
When I confront a similar task as before,
A. I don't like too many new ideas. Why should I change methods when old ones are available?
B. I will try new methods to get the task done better than last time.
3. Teamwork:
When I and a group of people work on a task together,
A. I believe teamwork can result in better outcomes than working alone.
B. I argue that a person who is really something can do a great job without working with others at all.
4. Social practice:
After I graduate from university,
A. I hope the job I find enables me to convert knowledge learned into actions that serve society and people.
B. I can't apply knowledge learned to society to help others.
5. Citizenship:
With respect to the interactions between a university and communities,
A. I like joining community service courses and believe I can be the bridge of communication between the university and communities.
B. I don't like the service courses combining the university and communities. Why

should I do the job that the university and communities should do?

6. Growth in learning:

Facing the unlimited knowledge and information,

A. I have a casual reading habit. I read whatever I think of and whatever I have at hand.

B. I like to learn by plan and with directions. I can fulfill the learning goal more easily this way.

7. Proactiveness and autonomy:

My view about opportunities is that

A. I rather wait and see than make an effort that does not necessarily bring good results.

B. I don't just wait for the opportunities to come.

8. Art and cultural content:

As far as art and cultural activities are concerned,

A. there are many opportunities for these activities as long as I want to join.

B. I am not very interested in and not willing to join these activities.

Data Collection and Analysis

The data were collected via Google online form, which consisted of the character development scale and a few demographic items. The participant professors provided the web address of the online form to students in class. Numerical data collected online includes:

1. The mean scores of questions in each aspect of character development. For instance, a student selects the answer which has a tendency to being more friendly and empathetic than the other answer for four out of the six questions in the aspect of friendliness and empathy; his or her mean score of that aspect is $4/6 = 0.67$. As such, the highest mean score of each aspect is $6/6 = 1.00$.
2. The sum of mean scores of all the eight aspects of character development (highest 8.00).
3. University years (first-year 1.00 to fourth-year 4.00).
4. The number of courses integrated with character development taken by a student (lowest 0.00).

With the analysis of variance (ANOVA), commonly used in comparing the means of three or more groups, the differences between students of the four university years in the scores of an aspect of character development were detected. When the F statistics in ANOVA reach a significant level, indicating that there are significant differences among these groups, post-hoc comparisons can present in which pair(s) of the groups the difference in means significantly exists. In addition, the differences in the means of character development (by aspects) between takers and non-takers of the general education courses integrated with character development as well as between females and males are analysed with independent sample t -tests, which are suitable for comparing the means of two groups.

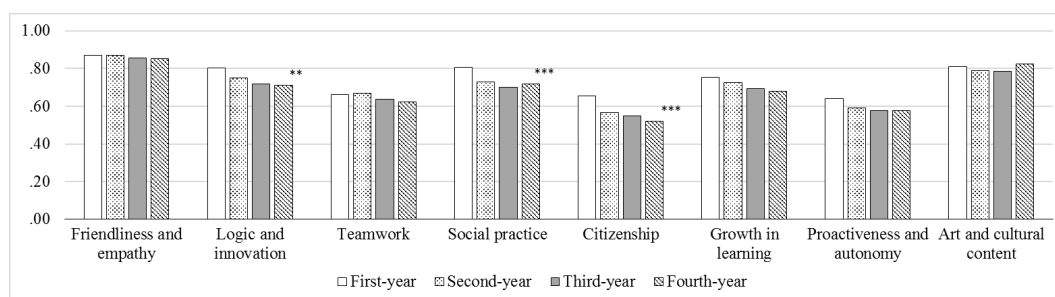
Research Results

The Scores of the Aspects of Character Development by University Years

As Figure 1 presents, “friendliness and empathy” and “art and cultural content” are the aspects with relatively high scores while “teamwork,” “citizenship,” and “proactiveness and autonomy” are the aspects with lower scores. The trend that the scores decrease with increasing university year is obvious. In the results of ANOVA, “logic and innovation” ($F = 5.30$, $p =$

.001), “social practice” ($F = 6.62, p = .000$), and “citizenship” ($F = 6.07, p < .001$) were the aspects with the university year differences reaching the statistically significant level and post-hoc comparisons further indicated that these differences significantly existed between first-year students and those of other years. The asterisks in Figure 1 denote the levels of significance (** $p < .01$, *** $p < .001$) for these aspects.

Figure 1
The Scores of the Aspects of Character Development by University Years



The Differences between Takers and Non-Takers of General Education Courses Integrated with Character Development in the Scores of Character Development

Results of the *t*-test reveal that there is no significant difference in the total scores of all aspects of character development between the two groups, the students who did not take (5.68) and those who used to take (5.67) the general courses integrated with character development (Table 1). Further analyses based on respective university years suggest that the significant differences in mean scores between the two groups are most pronounced in second-year students (Table 1). As indicated by the shaded cells in the rows titled “N-T difference” in Table 1, these significant differences emerge in the aspects including “logic and innovation” (0.73 vs. 0.77), “social practice” (0.70 vs. 0.76), “citizenship” (0.54 vs. 0.60), “growth in learning” (0.70 vs. 0.75), and “proactiveness and autonomy” (0.55 vs. 0.64), with the scores of course takers consistently higher than the scores of non-takers.

Table 1
The Scores of Aspects of Character Development

Aspects of character development		All four years				Second-year			
		All students	Males (M)	Females (F)	M-F difference	All students	Males (M)	Females (F)	M-F difference
Total scores of all eight aspects	Non-takers (N)	5.68	5.64	5.83	-0.19	5.52	5.41	5.80	-0.39*
	Takers (T)	5.67	5.57	6.09	-0.52***	5.89	5.81	6.15	-0.34
	N-T difference	0.01	0.07	-0.26	-	-0.36**	-0.40**	-0.35	-

Friendliness and empathy	Non-takers (N)	0.87	0.85	0.91	-0.05**	0.87	0.84	0.92	-0.07**
	Takers (T)	0.86	0.85	0.92	-0.07**	0.87	0.86	0.93	-0.08*
	N-T difference	0.00	0.00	-0.01	-	-0.01	-0.01	-0.02	-
Logic and innovation	Non-takers (N)	0.75	0.75	0.75	0.01	0.73	0.72	0.74	-0.01
	Takers (T)	0.74	0.73	0.78	-0.05	0.77	0.77	0.79	-0.02
	N-T difference	0.01	0.02	-0.03	-	-0.05*	-0.05	-0.06	-
Team-work	Non-takers (N)	0.66	0.66	0.66	0.00	0.66	0.66	0.66	-0.01
	Takers (T)	0.65	0.65	0.67	-0.02	0.68	0.67	0.70	-0.03
	N-T difference	0.00	0.01	-0.02	-	-0.02	-0.01	-0.04	-
Social practice	Non-takers (N)	0.74	0.74	0.74	-0.01	0.70	0.70	0.72	-0.02
	Takers (T)	0.72	0.71	0.77	-0.06*	0.76	0.75	0.77	-0.02
	N-T difference	0.01	0.02	-0.03	-	-0.05*	-0.05*	-0.05	-
Citizenship	Non-takers (N)	0.57	0.56	0.60	-0.04	0.54	0.51	0.61	-0.10*
	Takers (T)	0.57	0.55	0.65	-0.10**	0.60	0.59	0.65	-0.07
	N-T difference	0.00	0.01	-0.04	-	-0.07*	-0.08*	-0.05	-
Growth in learning	Non-takers (N)	0.72	0.71	0.75	-0.04	0.70	0.69	0.74	-0.05
	Takers (T)	0.72	0.71	0.77	-0.06*	0.75	0.75	0.76	-0.01
	N-T difference	0.00	0.00	-0.01	-	-0.05*	-0.06*	-0.03	-
Proactiveness and autonomy	Non-takers (N)	0.58	0.59	0.56	.03	0.55	0.55	0.56	0.00
	Takers (T)	0.60	0.60	0.64	-.04	0.64	0.64	0.62	0.02
	N-T difference	-0.02	0.00	-0.08	-	-0.08*	-0.09**	-0.07	-
Art and cultural content	Non-takers (N)	0.79	0.77	0.86	-0.09**	0.77	0.74	0.86	-0.13**
	Takers (T)	0.80	0.77	0.91	-0.14***	0.81	0.78	0.91	-0.13**
	N-T difference	-0.01	0.00	-0.05	-	-0.03	-0.04	-0.04	-

Gender Differences in Character Development

With all the students as the sample, the results of *t*-tests for the differences between males and females are presented in the column “M-F difference” in Table 1. Females scored

higher than males in all the aspects with significant gender differences regardless of whether they had taken the general education courses integrated with character development. For non-takers of the courses, significant gender difference appears in “friendliness and empathy” and “art and cultural content.” For takers of the courses, gender difference wide spreads in most of the aspects except “logic and innovation,” “teamwork,” and “proactiveness and autonomy,” resulting in a significant difference in the total score of all aspects.

With respect to second-year students, again, the scores of females are higher than those of males in all aspects with significant gender differences. For non-takers, total scores of all aspects (males 5.41; females 5.80) and three individual aspects, “friendliness and empathy,” “citizenship,” and “art and cultural content” present significant gender difference. For takers of the courses, gender difference exists only in “friendliness and empathy” and “art and cultural content.” Whether for all students in general or second-year students in specific, takers or non-takers, “teamwork” and “proactiveness and autonomy” show no significant gender difference while “art and cultural content” consistently exhibits such a difference.

Discussion

The Scores of Character Development Decrease with Increasing University Year

The results based on students of all four years demonstrate a first-to-fourth-year decline in almost all aspects of character development particularly remarkable in “social practice,” “citizenship,” and “logic and innovation.” “Citizenship” as the aspect with the lowest score for students of almost every year is notable because it coincides with the findings of a local study also investigating the character development of technical university students (Wu & Ke, 2016). The supposedly decreased social practice and citizenship of third- or fourth-year students contradicts the findings and arguments of some significant studies in student development. For instance, students were found to have more community and civic involvement (Astin, 1993; Pascarella & Terenzini, 2005, 1991; Sax, 2004) or no significant change in community contribution over the years in college (Sheldon, 2005).

The lower scores of these aspects of character development of fourth-year students than those of first-year students observed in our university might involve the mental difference between the cohorts of first-year and fourth-year students. First-year students could be concluded to be a cohort of students characterized by hope, positivity, and ideal according to studies. Chen (2011) found first-year students scored significantly higher than fourth-year students in the item of hope. They might pursue high educational goals which were more idealistic than realistic (Quilter, 1995) or tended to agree with the emphasis the universities put on educational goals, expected highly for these goals (Chang, 1999) and had high learning motivation in contrast to fourth-year students (Brouse et al., 2010). As such, the first-year students in the present study, who just entered the universities and began their new life, were presumed to give idealistic responses to the questions of most aspects of character development. The fourth-year and/or third-year students, however, were seemingly more realistic, self-centred, or cynical as conjectured. In Wu et al. (2011) study, fourth-year students perceived the least psychological and social wellness probably due to the anxiety in the last stage of college life. As they were about to leave, they could be less involved in their universities and more independent (Feldman & Newcomb, 1994), putting more emphasis on the reality of society and themselves. Intriguing findings revealed that in a business school, the fourth-year students held more reservations than first-year students to the importance of good business ethics (Luthar et al., 1997) and the fourth-year students of a general university felt more entitled to negotiate grades than first-year students did (Ciani et al., 2008). The chariness of the cohort of older undergraduates in our university to endorse the statements favouring social practices, and citizenship might be linked

to the latent self-centeredness in them.

The lack of innovation of fourth-year students, relative to first-year students, was in line with the results of several studies, with fewer studies reporting opposite results though (e.g., Kershaw et al., 2014). The supporting studies show that among engineering students, the same field of major as the majority of students of the present study, fourth-year students were less creative than first-year students (e.g., Genco et al., 2012; Kershaw et al., 2015; Sola et al., 2017; Surovek & Rassati, 2017), so is the non-engineering case of McIntyre et al. (2003). It is argued that after the third year increased education might cause lower creativity (Simonton, 1983). Surovek and Rassati (2017) posited that the accumulated knowledge of fourth-year students could instead constrain creative thoughts and a conservative culture to avoid failure also refrained them from creative options. These arguments informed us of the plausible accounts quite applicable to the situation of our case in which it was conjectured that many third-year and fourth-year students turned to see things in a way they felt safe and familiar with as they grew after their idealistic, naïve first and second years.

Gender Differences in the Aspects of Character Development

Similar to the results of Astin and Antonio's (2000) study that fourth-year female students scored higher than their male counterparts on all the measures of character development, females in the present study had higher mean scores in all aspects of character development than males. As non-takers of the general education courses integrated with character development were not affected by the teaching activities of those courses, the gender differences in certain aspects of character development of these students probably represent inherent differences between female and male undergraduate students. "Empathy and friendliness," "art and cultural content," and particularly in second-year students "citizenship" were the aspects in which females significantly outperformed males. Previous studies did provide consistent findings. Regardless of age, women were more empathetic than men (e.g., Eisenberg & Lennon, 1983; Hoffman, 1977; McCue & Gopoian, 2000; Mestre et al., 2009; Schieman & Van Gundy, 2000; Wu & Ke, 2016), showed more interest and appreciation in art and culture (e.g., Afhami & Mohammadi-Zarghan, 2018; Kaufman & Gabler, 2004; Lunneborg & Lunneborg, 1985), and were more willing to participate in civic engagement activities and community services (Astin & Antonio, 2000; Marcelo et al., 2007; Metzger & Smetana, 2009). On the other hand, these female-male gaps could be bridged as a result of the implementation of the general education courses integrated with character development.

The Effects of the General Education Courses Integrated with Character Development

As regards that the differences between takers and non-takers of the general education courses integrated with character development, indicating the potential effect of the courses, were manifested among second-year students rather than all students of four university years, it could be due to the considerable number of third- or fourth-year students, who were presumably more realistic and less motivated to learn than first-year and second-year students as previously argued, and hence less susceptible to the effect of the courses, averaging out the effect in a larger, age-diverse sample. Nonetheless, the effect of the courses on second-year students was quite comprehensive in terms of the number of aspects of character development that were positively affected. By and large, the effect was modest since the score differences were small but significant.

As a number of courses in different disciplinary fields that were integrated with character development varied in teaching strategies, but the statistical analysis was done at a level of all students instead of a level of courses, it was infeasible to attribute the growth in character

development to which pedagogies of which courses. Rather, the merit of those courses was discussed globally and conceptually with the teaching principles that were demonstrated to be conducive to desired character development. Other than just sitting in classes the students were engaged in a variety of learning activities, some of which were hands-on, or out-of-classroom, and all of which provided them with opportunities to experience, their views about what learning is were therefore widened more, as the teachers believed. The sense of achievement they felt when they completed the works or projects should be one of the factors making them favour the positive statements in the aspect of "growth in learning." It was also likely that they became more proactive as a result of the raised learning interest and more autonomy allowed by more flexible grading of those courses, providing a tentative account for their higher score in the aspect of "proactiveness and autonomy."

Kuh and Umbach (2004) summarized several activities beneficial for character development of college students and community services are one of them. Some of the general education courses integrated with character development had community-based activities such as helping farmers grow crops in local rural communities and working with the community elders on making handicrafts. The experiences in these activities might have positive influences on the aspects of "citizenship" and "social practices" as well, according to Vogelgesang and Astin's (2000) finding that service learning integrated with courses significantly promoted the sense of civic responsibility of college students. Along with the activities of other general education courses integrating character development, the students enrolled in these courses met different people, who were invited to the classrooms or worked in the places they visited, and probably found alternative perspectives different from how they used to see the people and issues. It was argued that the plurality in terms of themes, people, and venues present in these courses to some extent contributed to the higher scores of the students in the aspect of "logic and innovation" than non-takers of these courses.

It was noteworthy that the effects of the general education courses integrated with character development were mostly reflected by male second-year students. In light of the originally better performance of females than males in many aspects of character development as discussed above, for females there should be limited room for improvement resulting from the implemented courses. By contrast, the performance in a certain aspect of character development of male students could be increased by a discernible magnitude, catching up with the level of their female classmates in the implemented courses. This is evident for the aspect "total scores of all eight aspects" and the aspect "citizenship" of second-year students, both of which show the improving effect of those courses (i.e., the shaded cells in "N-T difference" rows in Table 1) on male students and the significant gender differences (i.e., the bolded numbers under "M-F difference" column in Table 1) present in non-takers of the implemented courses disappearing in takers of those courses.

Conclusions and Recommendations

In the present study, a team of participant professors integrated character development into many general education courses in several fields ranging from philosophy, law, art, to natural science and observed the small gains in a number of aspects of character development in the undergraduate students in a technical university in Taiwan. Compared with the students who did not take these courses, those who took these courses expressed more positive thoughts in the aspects such as "logic and innovation," "social practice," "citizenship," "growth in learning," and "proactiveness and autonomy" among all eight aspects. This was particularly the case for second-year students, associating a nonconventional finding that third- or fourth-year students had lower scores in many aspects of character development than the first-year and second-year students.

It is concluded that our activities featuring community services, hands-on practices, and flexible grading might be advantageous for some aspects of character development though attention should be drawn to the un-affected aspects, “friendliness and empathy,” “teamwork,” and “art and cultural content” as well as female students, which may require special approaches to (further) improvement. Still, future studies with careful research design are needed to provide empirical support for the effectiveness of each teaching strategy to enhance certain aspects of character development. It is also one limitation of this study. Another limitation is the use of cross-sectional rather than longitudinal data in the analysis of the character development differences between students in different university years. These differences are better explained from a cohort perspective in this study.

The findings of this study offer two practical implications. First, pedagogically teachers must take into account the fundamental differences between first-year students and third- or fourth-year students with respect to the mindset for learning. They need thoughtful tactics to empower third- or fourth-year students to be engaged in the learning activities related to character development. Second, teachers are encouraged to have a broader frame of what general education courses are about and make the best use of the advantages of these courses in cultivating students’ character. It is essential to guide the teaching of these courses with a central thought of making students good persons, not just knowledgeable persons. General education courses have more flexibility than department courses for teachers to do so.

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