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Continuing professional development for product designers: barriers and opportunities

Abstract

More designers expect and are willing to spend time to continue their education. It is not only because of new job requirements that designers need to upgrade and update their knowledge and experience, but also for self-satisfaction. To meet this educational need, a part-time programme has been offered to product designers with different educational backgrounds and working experiences. Evaluations of the overall arrangement of the programme and of the teaching and learning of some subjects have been conducted for six years. The evaluations have included questionnaires, classroom observations, and in-depth interviews with students and teachers. This paper briefly reviews the social changes and the need of product designers for continuing education. By reviewing the structure of the programme and the feedback of the design students, this paper discusses the difficulties that these students encounter in continuing their professional development in universities. According to the special arrangements in the programme aimed at meeting the needs of students, the paper identifies three opportunities to help students continue their education: that is, turning diversity into a resource, turning constraints into flexibility, and turning difficulties into motivation. The paper further discusses that, for such arrangements to be successful, administrators and teachers should have the same mission and goals in implementing the arrangements, such as flexible arrangements of timetables and flexible learning environment. Without consensus among administrators and teachers and their contribution and collaboration, it would be difficult to achieve *success*.

Key Words: *continuing education, product design, social change, industrial change*

Introduction

A part-time programme has been offered to product designers (and product design engineers) with different educational backgrounds and working experiences in a university of Hong Kong. Evaluations of the overall arrangement of the programme and of the teaching and learning of some subjects have been conducted for five years. The evaluations have included questionnaires, classroom observations, and in-depth interviews with students and teachers.

First, social changes and the need of product engineers and designers for continuing education are briefly reviewed. Then, the structure of the programme is reviewed. From feedback from the students, this paper discusses the difficulties that these students encounter in continuing their professional development in universities. According to the special arrangements aimed at meeting the needs of students, attempts are made in this paper to identify three opportunities to help students continue their education: that is, turning diversity into a resource, turning constraints into flexibility, and turning difficulties into motivation.

A hunger for degree studies

Not until the early 1990s when the number of university places increased significantly, it was not easy to study in a degree programme in a university in Hong Kong. For one thing, at that time, only a limited number of places were offered in universities. This was also the reason why university education was considered elite education at that time. A large portion of students who finished their secondary education did not have the opportunity to study locally in degree programmes, even with quite satisfactory public examination results. Some graduates therefore chose to further their studies abroad. However, at the time, not many families could afford to send their children away to study. One possible choice for such graduates was to study in part-time or evening programmes. With regard to local part-time programmes, at that time degree programmes were very rare. Thus, the possible choices were certificate, higher certificate, diploma, or higher diploma programmes which were considered lower qualifications compared to a degree.

In addition, although after the 1960s standards of living were rising, many were still struggling financially. Thus, even if some graduates managed to be accepted by a university, some of them opted to join the workforce instead in order to support their families.

Therefore, a significant number of professionals have only received educational qualifications lower than degree level. This situation is particularly common in the field of design. The major reason for this is that the design industries were not extremely concerned about the academic qualifications of their employees. Instead, the industry was more concerned about their practical training, experience, and practical work performance. This is the reason why so many well-known senior designers (including design engineers in the following paragraphs) in Hong Kong now still only hold very basic academic qualifications.

The situation has changed in recent years in the fields of design. As more and more young graduates in Hong Kong hold degree or higher qualifications, more professional designers with lower qualifications have been feeling the pressure to obtain degree or higher level educational qualifications. Many designers are also starting to realise that they need to upgrade and update their knowledge continuously, not only in their working environment, but also in academic institutions. Consequently, more and more designers expect to go back to university for continuing education.

General difficulties and limitations with regard to continuing education

Product designers face several general difficulties and limitations to continuing their education in Hong Kong (Siu, 2000). First of all, the working environment and job requirements for designers are becoming more difficult than ever. Long working hours and working overtime has become the norm and is almost compulsory nowadays. It is difficult for designers to spare the time to continue their education.

Many product designers are now also required to work outside of Hong Kong. For example, due to the relatively lower costs, many companies have moved their production factories to mainland China (The Government of the Hong Kong SAR, 2000; So, Lin & Poston, 2001), making it necessary for most of the product designers for those factories to work in mainland China. Designers are finding it difficult to find suitable universities in mainland China to continue their education. Good universities are not necessarily located close to the workplaces of these professionals. The learning approach and styles at universities differ from the professional experiences of these designers. Another major issue is that not many of the qualifications provided by universities in mainland China are as highly recognised as those obtained in Hong Kong.

Therefore, most product designers who have received their education in Hong Kong prefer to continue their part-time study in Hong Kong. However, the key difficulties facing these professionals is the long travelling distance from their workplaces to the universities in Hong Kong and constraints in timetable arrangements. Even if some designers have offices in Hong Kong, the need to frequently attend meetings, conferences, exhibitions, expos, etc., in other countries also results in unstable working hours and locations. This can have a significant effect on their study plans.

In addition, many product designers graduated some time ago. Quite a number find it difficult to adjust to academic life again (Siu, 2001). The nature and contents of design subjects change rapidly, and those working in industry tend to specialize in a specific area. Thus, it is difficult for them to pick up their books again in university and take a relatively broader approach to the acquisition of knowledge. Also as indicated before, some of these designers have only basic qualifications and their academic knowledge is quite outdated. As indicated by some of the mature students that were interviewed, they did not find it easy to absorb new learning materials, learning approaches and methods, and learning objectives and requirements (for example, ways of submitting their assignments).

In short, constraints in physical time and location and the students' own limitations can hinder and discourage the designers from furthering their studies (Siu, 2000, 2001).

Structure of the programme

To offer product designers the opportunity to continue their education, a degree programme was co-established in 2000 by a design school and two engineering departments in a university in Hong Kong. The programme is offered in a part-time mode and is targeted at product designers (and design engineers) who work in design-related industries and who wish to further their education and extend their experience in a university. Most of the students accepted in the programme are those who have not obtained a degree qualification in the areas of product design and engineering.

To meet new economic and industrial needs and also to give Hong Kong product designers an edge over those in mainland China, the core aims of the programme are to nurture them to upgrade and update their knowledge and experience. The core subjects of the programme are to provide a wider perspective overall, while the elective subjects specify particular areas that fit the diverse needs and interests of the students. For example, some subjects aim to nurture students with a conventional engineering background to be more creative and innovative, while other subjects aim to give students with a product design background a better foundation in technology and engineering.

As the programme was being run, evaluations of the programme and some subjects were conducted. Besides questionnaires and formal end-of-term meetings between staff and students to obtain the students' general feedback on the overall arrangement of the programme, class observations and interviews with the students in some design subjects were conducted. The students who were interviewed were randomly selected in class. They were invited to comment on the arrangement of the programme and the subjects, and voice their opinions about their studies, including the difficulties they were having. Some teachers were also interviewed for their comments on the programme curriculum and student performance.

Arrangements in some design subjects

Student-centred arrangement

Difficulties raised by the students as well as the teachers (that is, tutors and project supervisors) were given serious consideration. Although different actions were implemented in different subjects regarding particular situations and needs, 'student-centred' was at the core of the actions taken (Glasgow, 1997). The following actions were tested in some subjects:

(a) Awareness of the needs of students

The teachers were briefed to be aware of the students' particular limitations, constraints, needs, and expectations for their learning. In fact, this kind of awareness does not only strengthen mutual understanding between teachers and students, but also minimises the possibility of confrontation between the two parties and contributes to a better learning atmosphere. For example, one teacher questioned why so many evening (part-time) students come to class late all the time, in contrast from the practice of full-time students. In fact, after a more in-depth discussion between the teacher and the students, the teacher discovered that most of his students had tried their very best to come to class. However, many of them needed to cross the border from mainland China to attend class and would have to return to work on the following morning. Moreover, it was often not easy for them to leave their workplace early. The fact that they attended class (although very late) in fact showed that they were sincere about learning.

(b) Flexible study mode

As just stated above, students have different needs and expectations and face different limitations and constraints when they return to universities to study again. For example, some may prefer to graduate and obtain a certificate as soon as possible; some may want to enjoy learning under a more relaxed atmosphere, while some may only be able to afford to spend a little time studying, as they need to take care of their children. Thus, from the early beginning, the programme has allowed a high degree of freedom in the length of study and selection of the subjects in order to cater the different and also continuously changing needs of the students. Obviously, this kind of flexibility leads to difficulties in programme administration and curriculum implementation (Siu, 2000). Moreover, too much flexibility and freedom may sometimes lead to negative outcomes. For example, the programme coordinators pointed out that a student might tend to drop out if the length of study was too long. In contrast, suitable pressure (in particular peer pressure from the students themselves) could push students into becoming more perseverant about learning.

(c) Flexible timetable and learning environment

Not only is there flexibility in the learning structure of the whole programme, a certain kind of freedom and self-initiative is also allowed in each subject. Besides attending regular lectures, students are encouraged to set up their own schedules for other learning activities, for example, project tutorials, investigations, and studio work. According to the evaluations, such flexibility cannot be successfully implemented in all subjects. Some subjects are more difficult to schedule in a flexible manner, such as those that rely heavily on regular lectures and seminars, and assessment mainly based on examinations. Students need to participate in these activities according to a very rigid timetable. On the other hand, the teachers who were

interviewed further pointed out that the project approach was good as flexible timetables and learning environments were possible (*ASHE-ERIC Higher Education Report No. 8, 1994; Cuffy & Kirkley, 2004*). This is because, in general, the objectives, activities, and outcomes of projects are varied that there is no need to force all students into a fixed physical environment and at fixed timeslots all the times. Moreover, excessively rigid arrangements can sometimes hinder the development of projects. For example, some students may need to conduct field investigations and interviews right at the time they need to attend a lesson.

(d) Tailor-made curricula and learning materials

One of the characteristics of part-time programmes (or continuing education programmes) is that there is a higher chance that the students will come from various disciplines and have diverse learning and working experiences (Huddleston, 2002; Jarvis, 2003; Siu, 2000, 2001; Tight, 1991). For example, the students enrolled in the programme in 2002 had good working experience, but low academic qualifications. In 2004, a significant number of students were recent graduates. They lacked practical working experience. Some even did not gain any working experience, but enrolled in the programme when they could not continue their education in day-time programmes. These students found it relatively easy to fit into university life. To deal with such diversity, only key objectives were fixed in the syllabus of each subject. All of the other contents of the syllabus were flexible so that they could be tailor-made for the students. Most of the students were assessed on projects. These arrangements provided freedom both to the students in selecting contents suitable to their own needs and interests, and to the teachers in assessing students from different perspectives. For example, many students who attended a design subject in 2004 were good at toy and gift product design and manufacturing. For balance in learning, on the one hand, the contents of the subject were purposely designed to motivate students to gain knowledge and experience apart from toy and gift product design. On the other hand, the project set for the students required them to present their project solutions with a more in-depth analysis related to the manufacturing process, that is, drawing on their experience.

Turning diversity into a resource

As indicated before, most part-time students come from different design disciplines and with different experiences. This diversity of students leads to difficulty in three areas in the running of the programme: (a) administration, (b) curriculum planning, and (c) implementation. On the other hand, the evaluations of the programme and some individual subjects have also indicated that, if the diversity is well handled, it can be turned into a resource, as follows:

- Students with different knowledge and experiences can help each other to widen the scope of their knowledge and experience. In other words, the particular strengths of a student can become the strengths of others. Or at least, these individual strengths can benefit and assist learning activities. For example, one student was knowledgeable about mould designs, the moulding process (in particular sand casting), and the application of materials. Many graduates of recent years are weak in these areas. When dealing with a group project related to street furniture design, this student gave the whole group a great deal of help and stimulated them to give more serious consideration to the moulding process and to properly choose materials for the outdoor environment.
- Class observations indicated that students with more working experience tend to be more subjective; and slightly stubborn in some matters. It is difficult for these students to put aside their existing ways of thinking. In the contrast, students with less working experience (that is, fresh graduates) are always unwilling to make any decisions, in particular in a group working environment. However, as one of the teachers reflected, a good arrangement of putting students with different experiences together can strengthen the quality of group work. Of course, this positive consequence may not exist if the 'good' arrangement cannot be made. That is, a good arrangement includes providing good guidance to students to help them to distribute the workload and responsibilities.
- Diverse expectations can easily affect the harmony of the students (Siu, 2001). For example, some students may only expect a pass grade and hope to obtain a degree. These students tend to fulfil the subject requirements only marginally. Yet, some students, in particular those who want to further their education at a higher level, may expect to be at the top of the class. They tend to like to approach the teachers and complain about the performance and contribution in group work of members of their group. According to observations in classes and the feedback of the teachers,

a good arrangement of collaboration among students and allowing them to push each other constructively is very important. As was also agreed by the students, a group project can force some 'lazy' students to work harder, or let them down (Falchikov, 2001; Faulkner, Littleton & Woodhead, 1998). The teachers reflected that the more a teacher is involved in group discussions at the beginning of a group project, the better and more positive the outcome will be. Once the group members are on the right track, the teacher can gradually decrease his/her involvement.

Turning constraints into flexibility

As reviewed before, students face quite a lot of constraints in continuing their education in universities. To turn such constraints into flexibility, the first thing to do is to accept such constraints as normal and try to find ways to solve the problems from other perspectives:

- Programme and subject planning always means establishing a set of policies, rules, and references in guiding a programme to run effectively. Constraints exist when a student's personal situation does not fit such policies, rules, and guidelines. As the teachers interviewed agreed, part-time students in general have more constraints in their learning. This means that they find it more difficult to conform to the established policies, rules, and guidelines. To deal with this situation, after running the programme for one year and obtaining feedback from an end-of-term meeting with students, some teachers started looking at such constraints from another perspective. For example, instead of punishing the students (that is, negative reinforcement) when the students were unable to meet the requirements such as attending classes on time, as discussed above, one of the teachers tried to adjust the contents of the subject and the learning activities. Very simply, he tried to reduce the number of formal lectures and seminars, and asked the students to divide themselves into small groups to engage in more exploratory learning activities, for example, self-learning and small group study reports. During the interview, the teacher agreed that he first needed to accept more flexible subject contents and, in particular, more unpredictable learning outcomes. The students were also required to realize that there would no more ready-made materials handed to them, nor would they be spoon-fed learning activities.
- Students coming from different disciplines and/or with different experiences sometimes also imply constraints in providing more in-depth knowledge. This situation is more significant if the students are forced to learn together. For example, some students with a design background are weak in mathematics and technological subjects. A design graduate with only a passing grade in mathematics in their HKCEE or GCE results is not unusual. As a teacher reflected in a staff meeting, requiring such students to learn calculus or computing with students with engineering backgrounds is a nightmare. Thus, most of the time, the context and requirements of the subjects are 'normalised'. Consequently, both students with design and engineering backgrounds cannot benefit from the lessons. To overcome such constraints, two approaches have been taken to some of the subjects. First, as is most commonly practised at present, the programme provides more elective subjects that fit the diverse needs of the students. As discussed in the previous section, this approach allows the students a certain degree of freedom to make choices. However, it also creates practical constraints in programme administration and decreases the opportunity for students with different backgrounds to learn together. Thus, to overcome this drawback, the second approach is to provide more learning aids in class to help students with different backgrounds and qualifications to 'learn together'. For example, software and learning kits are provided for students to allow them skip many repetitive and meaningless mathematical calculations that are not useful for their future careers. In other words, students are required to focus on basic theoretical understandings and different applications. In fact, as both teachers and students agreed, such an arrangement results in a more flexible programme and subject planning. It also allows students with different backgrounds to have more chances to learn together and support each other.
- As indicated above, geographical constraints are key issue in implementing the programme. Besides allowing students more flexibility to initiate their learning timetable, they can also be allowed to learn at different locations (Duffy & Kirkley, 2004). Advances in internet services and the popularity of using computers in learning have given a big boost to remote-location learning. However, according to the evaluation of the programme, up-to-date, real-time internet learning still has its constraints (Siu, 2001; Tiene, 2001). For example, not all of the students working in mainland China have access to a computer and to the internet at some of

their workplaces, particularly in factories in the western region of the country. Moreover, requiring students to engage in real-time internet learning also creates inflexibility in the students' time arrangements. Nevertheless, the internet offers a great advantage in terms of communication and in the delivery and transfer of materials (Tiene, 2001). For example, many students indicated that they could discuss their assignments and transfer large-sized files easily nowadays. In short, by using advanced technology well, students are finding it easier to overcome some of the constraints to learning, which in turn is motivating them to continue their education.

Turning difficulties into motivation

When faced with difficulties in learning, part-time students commonly react in two ways. First, some of them will give up their studies. This is why the drop-out rate for part-time students is generally higher than for full-time students. Different from full-time students, part-time students also tend to think that they can easily resume their education at any time or that terminating their studies would not result in a big loss (at least not as serious a loss as for a full-time student). However, the fact is that the percentage of students who have dropped out and then resumed their education is not high. Second, some students like to use tactics to escape from their difficulties, rather than face the difficulties directly.

To discourage such 'tactics' and tendencies to 'escape', some considerations have been given to positive actions to motivate the students:

- According to observations, one of the major difficulties for part-time students is that they had not realised how difficult it would be to resume their studies. Or, as some students indicated during the interviews, the difficulties in studying, such as reading books, were different from those in working. In other words, they were not sufficiently or correctly prepared to continue their education. From the experience gained from the programme, there are two major ways to give such students support. First, showing understanding and concern for the individual, and giving students additional support, are all important. For example, in 2003, 2004 and 2006, some students with a design background were weak in mathematics. They were given remedial classes in the weekends. They were able to get support to review their knowledge. Some of these students were interviewed. They agreed that, after obtaining the additional support, they felt that they were not alone. Most importantly they felt that the objectives set in the programme and the subjects were attainable. Second, the support that is offered needs to give satisfaction to the students. For example, after taking the remedial mathematics classes, many students gained enough confidence to feel that they (that is, design students) could also learn something in the field of engineering. As the teachers agreed, the key factor was that the level of learning should not be so high that the students are unable to handle it, particularly at the beginning. Only through such confidence-building measures could the students gain the motivation to learn, and they were also willing to continue to learn. Obviously, such additional support requires additional resources. Yet, as one of the administrative coordinators of the programme indicated, such an investment is worthwhile because it is much better than losing students and because it can help to ensure the quality of the programme output.
- In general, part-time students have relatively less peer-group spirit than full-time students (Siu, 2005). This is understandable, as they come from different areas and backgrounds, have more diverse expectations, and work in different locations. The most important point is that they lack or are unwilling to spend the time to stay together. In evening class, students will come to class late and leave immediately after the class ends. In turn, the students do not tend to communicate much with each other. However, according to observations in the programme, peer groups are an important resource to turn the students' difficulties (as well as concerns) into motivation. However, group work in part-time programmes tends to fail because teachers rely too much on self-initiated group cooperation. For example, students are always required to hold group activities outside class, such as meetings and for the handling of group assignments. However, as indicated above, the fact is that part-time students are seldom willing to spend 'extra' time to finish their assignments. Thus, allowing more group work in class is very important. This is because students can get support from their peer group to work together to solve difficulties, and therefore find it unnecessary to spend too much 'extra' effort in doing their work.
- Motivation comes from able to see the need for and importance of doing something (Reeve, 2005; Siu, 2005). When a difficulty is not easy to eliminate, letting students to see the need

for and importance of a requirement is very important (Evan, 2003). Part-time students always like to ask one question, in particular when they face difficulties: 'Why do we need to learn or do this?' Therefore, providing a clear explanation and positive reinforcement for students facing difficulties in learning tasks is crucial. According to the feedback from some of the teachers, directing the students' focus on the advantage of a task can minimise their negative feelings when faced with the difficulty of accomplishing that task.

Conclusion

More designers expect and are willing to spend time to continue their education (Cribbin & Kennedy, 2002; Maehl, 2000; Pescosolido & Aminzade, 1999; Siu, 2003). It is not only because of new job requirements that designers need to upgrade and update their knowledge and experience, but also for self-satisfaction (Center for Educational Research and Innovation, 2000; West, 1996). According to the case of a part-time programme offered to students in product design and engineering discussed above, we identified some arrangements that are necessary to help students deal with the difficulties they might encounter in their studies. Through such arrangements, we expect to turn diversity into a resource, turn constraints into flexibility, and turn difficulties into motivation. The experience shows that, for such arrangements to be successful, administrators and teachers should have the same mission and goals in implementing the arrangements, such as flexible arrangements of timetables and flexible learning environment (Siu, 2000, 2003, 2005). Without consensus among administrators and teachers and their contribution and collaboration, it would be difficult to achieve success.

Resources are also important. Some people may argue that the above arrangements may be costly. Yet the fact is that, we have noticed from our experience in running the programme that such improvements, and the assurance of quality that they bring, generate assets for the programme, leading to high enrolment rates. We cannot deny that more and more part-time programmes are being offered in the market. More programme organisers are finding that it is not easy to attain or maintain success. Only by continuously reviewing and rearranging the programme to create a better environment for learning can students be helped to transform their difficulties into opportunities.

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