Promoting Active Learning in the Study of Geriatric Rehabilitation

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A b s t r a c t

The ability to critically appraise clients' functional problems and formulate appropriate intervention programmes is fundamental to the successful practice of occupational therapy. However, conventional teaching-learning methodology, characterised by teacher-centred learning, group teaching and doctrinal learning, does not foster in students the ability to be independent learners equipping them with either adequate problem-solving skills or effective communication skills. The objectives of this study are aimed at developing in occupational therapy students an ability to engage in self-directed learning, and facilitating the linking of theory-based learning to practice-based learning. An inquiry-based learning (IBL) methodology, using problems and simulated activities, was introduced in two subjects related to geriatric rehabilitation. Problems used in tutorials were adapted from clinical settings to promote students' critical appreciation and active learning of real-life situations. Lectures, supplementary to tutorials, aimed at consolidating theoretical and conceptual issues related to geriatric rehabilitation. Evaluation of the project included: student interviews, reflective journals, and interviews with clinical educators. Students appreciated the use of real-life cases to promote problem-solving and critical thinking. Also, students learned to take a systematic approach to problem-solving activities, as illustrated by their generation of learning issues and presentations. Working together in groups, students developed confidence and skills in expressing their own ideas and challenging the ideas of others. However, this teaching-learning methodology created anxiety in students who had to complete a number of assignments within a limited time-frame. Inadequate library resources and uncertainty about the expected depth and breadth of their learning also frustrated students. Clinical educators found students better equipped with clinical reasoning skills when working with clients. However, students required the facilitation of educators to integrate knowledge into case management. Findings of this project demonstrate the benefits of an IBL approach in the promotion of students' independent learning and in the development of learning skills. At the same time, the study unveils the challenges of delivering a subject using an IBL methodology within a traditional curriculum.

Introduction

The size of the elderly population is increasing worldwide, a phenomenon which is reflected in Hong Kong. In 1997, 14.2% of the local population was aged over 65 years, with an expectation that this figure will rise to 14.8% in 2006 and 19.6% in 2016 (Census & Statistics Department, 1997). Occupational therapy plays a salient role in geriatric rehabilitation, particularly in the area of community integration (Carlson, Fanchiang, Zemke, & Clarke, 1996). To equip occupational therapy students with adequate knowledge and skills to work with geriatric clients at a beginning practitioner level, two subjects related to the geriatric specialty were introduced into the B.Sc. course in Occupational Therapy in 1993. The two subjects: The Ageing Process, and Occupational Therapy in Geriatric Rehabilitation, were taught simultaneously in the second semester of the second year. The former subject gives an overview of the biological, psychological and sociological aspects of ageing, and pathologies of common illnesses seen in older people,

while the latter covers occupational therapy approaches, assessments and interventions for common conditions related to the ageing process. These two subjects had been found to have a positive impact on students' perception of, and attitude towards, older people (Chung, 1995).

The teaching-learning methodology of these two subjects consisted of lectures, tutorials and seminars. Lectures were primarily didactic, with lecture notes and key reading materials being distributed to students. Two-thirds of tutorials focused on case management, in which students were given simulated clinical cases to explore in small groups. Despite tutorials being aimed at fostering active learning and stimulating discussions among students in small groups, students were not found to be motivated to participate in discussions, and expected much input from the tutor. Because of the time constraints and students' implicit expectations, tutors often gave guided and structured questions to help students focus on pertinent issues in the cases. In other words, the tutorials reverted to a traditional mode of teaching-learning methodology, in which teachers delivered information and students received information. Another one-third of tutorials were skill laboratories aimed at developing students' competence in conducting assessments and treatment techniques as appropriate to occupational therapy in geriatric rehabilitation.

Students' lack of motivation to actively participate in learning might be related to the mode of learning to which they had been exposed in primary and secondary education. Owing to the examination-oriented nature of primary and secondary education, the teachers' major tasks are to 'cover' a complete syllabus in preparation for an examination, while students are required to learn the contents of the syllabus within a given time-frame. Teachers largely adopt a 'spoon-feeding' strategy to deliver teaching materials, and students are gradually shaped into passive recipients of knowledge. In addition, the examination demands place an additional burden on students whose primary goals are to obtain high grades in assignments and examinations.

Although Hong Kong students show a tendency to a deep-learning approach, as do their Australian counterparts (Watkins, & Biggs, 1996), they are exposed to traditional teaching-learning strategies and a tightly packed curriculum where the learning environments does not promote student-centred learning. It is a common observation in Hong Kong that university students are good at reciting information, but weak in analysing and integrating information. Also, they seldom look up additional information to consolidate their knowledge, and depend much on teaching notes. At the same time, teachers may hesitate to adopt innovative teaching-learning methodologies, as students often evaluate teaching performance based on the amount of lecture notes and reference materials they are given. To avoid receiving non-encouraging student feedback, teachers may compromise and adhere to conventional teaching-learning methodologies.

As with other medical and health care professionals, occupational therapists working in geriatric rehabilitation should be self-motivated, problem-oriented, possess the ability to integrate knowledge, and communicate effectively with clients and team members. The undergraduate occupational therapy programme, therefore, plays a vital role in fostering students' self-directed learning, skills in problem-solving, and effective communication. However, the existing teaching plans and teaching-learning methodology seem to be inadequate to nurture in students an aptitude for this type of learning. Basically, three problems were encountered in the existing subject design.

1. Students were passive learners, even though case management was introduced in tutorials, and lacked motivation to search for materials relevant to the assigned case, expecting much input from the teachers.

2. Students were weak at integrating theoretical and conceptual knowledge into case management.

3. The teaching-learning strategies were inadequate to promote students' problem-solving skills, skills which are essential for an occupational therapist.

Kember, & Gow (1991) argue that the Asian students' stereotype of being 'rote learners' is more related to curriculum and learning environments, than the inherent characteristics of students; that is to say, students' learning attitudes and styles can be modified by learning environments and teaching-learning methodology. Hence, an action research project was developed with the following objectives:

1. to develop students' self-directed learning skills which are essential for a life-long learner;

2. to promote students' problem-solving and critical thinking skills which are essential for a clinical practitioner;

3. to facilitate students' application of theory-based knowledge to case management.

Implementation

Phase I: Planning and Preparation

Re-structuring of Teaching Plans
The restructuring of subject curricula and teaching plans took place in Phase I of the project, in which teaching staff and the programme leader were invited for consultation. Also, 12 students who had undertaken these two subjects were invited to two focus group interviews. The interviews aimed at soliciting students' opinions and ideas about promoting active learning attitudes and problem-solving skills when learning about geriatric rehabilitation. Four major themes emerged from the interview data: i) students' preference for using real-life scenarios as the basis for learning about case management; ii) clear objectives and functions of tutorials; iii) availability of resource materials to support learning through problems; and iv) reasonable workload and assessment.

A consensus was reached after consulting both teaching staff and students. The two subjects : The Ageing Process, and Occupational Therapy in Geriatric Rehabilitation were combined and planned as one subject, with the former one supporting the latter. The advantages of planning the teaching content of these two subjects together, included a uniform teaching-learning methodology and a better integration of theoretical knowledge with clinical situations. The two subjects were taught over a 14-week semester, with a 2-hour lecture and 4-hour tutorial every week. Inquiry-based learning (IBL) was adopted as the principal teaching-learning methodology. As such, tutorials and inquiry seminars formed the basis of the subjects in which four problems/cases were introduced in tutorials. Students, working in small groups of five, were expected to generate learning issues and search for information related to the problems. Lectures were used to consolidate learning issues and knowledge generated from the problems. They also served as a forum for sharing and discussing information amongst the tutorial groups.

In addition to classroom learning, students were expected to attend two 4-hour sessions of service-learning, which is a new teaching-learning mode for health care professionals. This involves students being provided with a "structured learning experience that combines community service with explicit learning objectives, preparation, and reflection" (Seifer, 1998, p. 274). The objectives of service-learning in this project were to promote students' integration of knowledge into real-life situations as well as to develop a better understanding of the needs of geriatric clients living in the community. The original plan of the service-learning was to match students' learning issues with the service experiences, but the researcher later found that the exact matching of students' individual expectations and the service-learning situations was not

feasible. Thus, the service-learning was planned and arranged with a more global perspective, rather than matching the interests of individual students.

Development of Real-life Problems and Resource Materials

Problems are central to IBL, and so they must be carefully designed to: a) meet the learning objectives of the subjects, and b) facilitate students' problem-solving and critical analytical skills. Good problems are open-ended and ill-defined but they must incorporate content objectives and build on prior knowledge. In addition, problems must be of interest to students, require decision-making and judgement, allow the generation of assumptions, and encourage group-work. With this in mind, four situations were developed simulating real-life clinical situations; three were presented in written mode and one was a video presentation. After the first case was developed, five former students were invited to pilot test its ability to: promote problem-solving skills, develop critical analytical skills, and facilitate the integration of information. The case was also checked against the learning objectives and the students' interest. Comments obtained were used to modify the first case, and then as the basis for the formulation of the other three cases.

Resources and reference materials are essential to, and the basis of IBL. As such, a list of useful reference materials was produced to help students focus on the learning issues. In addition, a web site was developed which related to one pathological condition (dementia) as a resource package to encourage self-study.

Phase II: Implementation

Prior to the implementation of the subject, teachers were prepared to ensure that they understood their roles in lectures, tutorial and seminars. This preparation was deemed important so that any anxiety on the part of the teachers about changing their teaching, from being a didactic teacher to a supporter/facilitator, could be allayed. Also the two tutors involved needed to reach agreement about learning issues and the teaching-learning methodology.

The revised teaching plan with the use of IBL was implemented with 55 Year II students of the B.Sc. course in Occupational Therapy in 1998/99. At the first session, students were introduced to the teaching plan, the teaching-learning methodology, learning objectives of the subjects, and their roles in lectures and tutorials.

Phase III: Evaluation

The effectiveness of the study in promoting independent learning and application of knowledge to clinical practice was evaluated using three methods: i) student interviews in the form of focus groups; ii) students' reflections; iii) interviews with clinical educators. The first two methods collected students' subjective comments about the teaching-learning methodology, and the latter provided objective information about students' performance. Data credibility was established by triangulating data from different sources (Miles, & Huberman, 1994). The construct validity was improved by having the students and clinical educators review the data and the quotes included in the report.

Student Interviews and Reflective Journals

Eight students were randomly selected from a whole class of 55 students and invited to participate in two focus group interviews. There were six female students and two male students, ages ranging from 20 to 23 years. Focus group interviews have the advantage of gathering rich and multi-faceted information in a relatively short period of time (Morgan, 1988) and facilitating the exchange of ideas and generation of insights through group discussions (Krueger,

1994). An independent and experienced moderator conducted the interviews, and the audio-taped interviews were then transcribed for data analysis. Topics discussed in the focus group interviews included:

- whether the use of real-world scenarios were helpful and stimulating in promoting problem-solving skills;

- whether the revised teaching plan and teaching-learning methodology encouraged self-directed learning;

- whether the problems met the learning objectives of the students and students' learning issues;

- whether the use of IBL facilitated students' ability in integrating theoretical knowledge and clinical problems;

- the aspects of learning students most enjoyed, and most disliked in the subjects; and

- students' recommendations for further improvement.

In addition to interviews, students were asked to write a reflective journal of their learning experiences of IBL. Specifically, students were encouraged to reflect on the benefits and drawbacks of IBL on learning. Writing reflective journals is a way of promoting reflective learning which is essential for clinical practitioners (Powell, 1989). As there was no word limit for reflective journals, most students submitted a 2-3 page reflective journal, but some wrote just a few paragraphs.

Results

From the analysis of both interview scripts and reflective journals emerged four themes: active and responsible learning attitude; gains in learning skills; applicability of knowledge in clinical situations; and love/hate of the teaching-learning approach.

Active and Responsible Learning Attitude

In general, students found the revised teaching plan provided them with clearer expectations about the learning outcomes. When students learned that their roles were active learners rather than passive recipients of knowledge, they adjusted their learning styles to match with the expected learning role. One student reflected on his experience of preparing himself to be an active learner:

> We were told at the first session that we were expected assume the responsibility for our own learning. I know that I have to adopt a more active role in the learning process, so I am psychologically prepared for this journey of learning. In the first tutorial, we were given a case with little information... we had vague ideas of how to go about it, but we knew that that we have to make assumptions, look up information to make sense of the case. ... The learning process is exciting as though I am constructing a jigsaw puzzle, but sometimes I feel stressed and frustrated.

The use of an inquiry-based teaching-learning approach also gave students the opportunity to be responsible for their learning. Some students pointed out that the peer pressure created in the small group learning prompted them to work actively in the process. For instance, two students revealed this concern in the focus group interview:

> I learned to be more active in the learning process. In the past, I used to wait for teachers' input and answers. It is not the case in this module, as I have to be responsible for finding solutions to the problems. I can't let myself lag behind my group mates because they pay so much effort in searching and preparing the presentation.

…With the use of this teaching-learning method, I cannot wait to be fed. Instead, I have to take responsibility for my learning. … Sometimes the group pressures me to take the learning seriously.

Gains in Learning Skills

The most common learning skills that students developed through the learning process were how to conduct a literature search, and presentation skills. Although these study skills were also expected in other subjects, students commented that most subjects did not provide them with structured opportunities to develop these study skills. The following two excerpts illustrate students' development in study skills:

What I learnt most from this subject were the methods of searching for information and literature on a certain topic. In the past, I was afraid of going to the library because I had few ideas on how to search books and journal articles. But as we had to look up information to understand the problems, I had to overcome this fear. Fortunately, my peers were helpful and we learnt together. … Also, the teachers taught us the strategies of searching for information. … I am also happy that I know how to search for information from the electronic database.

… As we were required to do three presentations in this subject, I found myself better equipped with the skills of preparing a presentation, and giving a presentation in front of audiences. I learnt not to read from the scripts, but to pay attention to audience's responses during the presentation. In other words, I may need to be flexible and interactive in the presentation. … I think presentation skills are important in my future career, as I will have to attend ward rounds and conferences in which I will discuss my professional opinions in front of a group of health care professionals.

In addition, students learned other study skills such as brainstorming and making assumptions about the problems, integrating knowledge and critically appraising information. Some students expressed their delight at being critical learners in their study, which can be illustrated by one student's reflection:

I am happy to know my ability and potential in learning. In this subject, we were given the opportunity to be master of the learning. … I learnt to ask questions related to the given problems and establish own learning issues. … We collected information from different sources; we discussed and integrated the information to formulate solutions for the problem.

Some students also transferred the learnt study skills to other subjects. One student portrayed her generalisation of study skills:

… I find my learning habits have changed. Even when I receive lecture notes and learning materials from lecturers of other subjects, I still go to the library to search for additional information to improve my understanding of the topic. … I am happy to see this change in my learning habit; I think university students must be responsible for their study.

Application and Integration of Knowledge

Students liked the use of real-world scenarios and service-learning, which allowed them to have a realistic appreciation of the complexity of clinical cases. Some students expressed a better understanding of the learned materials after the experiences of working on real-life scenarios in tutorials. The following two excerpts revealed students' appreciation of real-life scenarios and service-learning:

The use of real-life scenarios helps me to have a more realistic appreciation of clinical problems that I am going to handle after graduation. They are interesting enough to stimulate our discussions and thinking. In fact, we position ourselves as therapists when we make assumptions of the problems and then develop realistic solutions as appropriate to these problems. As we are all involved in the learning process, we learn better from the problems as opposed to the lecture-type of teaching.

I enjoyed the service-learning very much. I helped with a bowling green activity for a group of individuals with stroke. … During the activity, I had the opportunity to relate knowledge that I learned from the subject into real clients. I also had the chance to practise the transfer techniques that I learned in class. … On the whole, the service-learning provided me with a valuable opportunity to apply knowledge that I learned in school in real-life situations.

Feelings about Learning Experiences

Students revealed love-hate feelings about IBL. On the one hand, they liked this teaching-learning strategy because they developed learning skills and had a better understanding of the content materials. These positive feelings were discussed in previous sections. In addition, students found this learning approach interesting and stimulated independent learning. One student said she felt like a university student because she was provided with the opportunity to explore and acquire knowledge. Another student expressed her love/hate attitude towards this teaching-learning mode:

I participate in the whole learning process, starting from brainstorming and identifying problems, to generating learning issues, and to searching, discussing and analysing information, I feel a strong sense of responsibility for my learning. As I am so involved in the learning process, I find I have a better understanding of the study matter. … Having said that, I sometimes feel frustrated because I am not sure of the accuracy and the scope of the searched materials. The tutors … they do not tell us the right answers but facilitate us to critically analyse the arguments, I know that it's good to develop problem-solving skills, but I sometimes feel insecure and lost. I feel like having something concrete, like guidelines and directions.

On the other hand, students were anxious when asked to take responsibility for the study process. For instance, they were expected to generate learning issues and identify new knowledge required to understand the problems. In spite of the problem itself being interesting enough to stimulate students' curiosity, most of them wanted to have more concrete and definite answers from teachers before they started working on the learning issues. This insecure feeling was shared and raised by a number of students. The following two excerpts illustrate students' insecure feeling about the scope of learning:

I am puzzled when we were given a problem. We don't know where to start; how to ask questions related to the problem; and how to identify key information and gaps in the presented problem. We five of us, are quiet. I avoid making eye contact with other group-mates by fixing my eyes on the paper. … Well, you know, this is not our usual practice of learning. I must say that I am afraid of making mistakes and want to get the correct answers from teachers. However, this is not the case in this subject. … The tutor tries to facilitate our discussions, but since we have five small groups in a class, so it takes a long time before she comes to our group.

I don't know how much I have to learn about the problem, I also don't know if the direction of our literature search is correct or not. … What I don't like about this teaching method is that I do not receive concrete answers. I am afraid that I learn less than my classmates.

Students also felt stressed because they had to finish the learning task within a short period of time. This stressful experience can be demonstrated by a student's comment:

> We were normally given three weeks to work on a problem, but we had assignments from other subjects. … I often prepared materials overnight if I had this class the other day, I felt really stressful. … Moreover, I spent a lot of effort in studying this subject, such as searching and discussing information, but I am not happy with the outcomes.

Although students developed the skills of searching the literature, the majority of students were frustrated by the actual searching process because of the limited number of books and references in circulation in the library. As a result, students sometimes had limited information to review and discuss when working on the learning issues. The lack of resources created an additional stress on students who had a tightly packed curriculum. To cope with this problem, some students searched the Internet for information. However, students expressed their concern for the accuracy of information in the Internet.

Comments from Clinical Educators

Three clinical educators working in geriatric rehabilitation were interviewed individually for their comments about students' problem-solving skills and their ability to synthesise information when dealing with actual clients in clinical practice. Their comments reflected the learning ability of 18 students who went through the IBL process. In general, the clinical educators noted that students were more active in asking questions and expressing their own ideas. For instance, one clinical educator commented on students' confidence in taking up clinical cases, and their initiatives in sharing and discussing learning experiences with staff and peers.

As for problem-solving skills, the clinical educators tended to agree that most students were able to adopt a systematic way of identifying problems, setting objectives and formulating treatment plans. Most geriatric clients suffer from different forms of chronic illnesses. Students, as noted by clinical educators, could prioritise the clinical problems in terms of importance. However, students were still not competent at applying knowledge in case management. Very often, students followed the clinical protocol but did not attempt to understand the underlying principles guiding the practice. Clinical educators, therefore, needed to remind students to discuss knowledge and practice models as applied to case management.

Discussion

How Important are Learning Environments for Learning?

Hong Kong students are often stereotyped as 'rote learners' who rely heavily on the input of teachers and are passive receivers of knowledge (Biggs, cited in Watkins, Reghi, & Astilla, 1991). As with a surface learning approach, 'rote learners' are eager to look for correct answers, but weak at integrating knowledge (Biggs, 1991). The myth of 'rote learner', however, is not supported in this study, as students demonstrated initiative in assuming an active role and taking responsibility for learning. This finding is encouraging because it demonstrates the significance of learning environments on learning attitude. Also, the finding confirms Kember and Gow's (1991) argument that students' learning styles can be promoted by appropriate learning environments. In addition, students develop learning skills through this teaching-learning method. Bujan, Havlin, Hendzell, Lokes and Pries (1996) also commented that students' active assumption of responsibility for learning is not only significant in their development as life-long learners, but it also contributes to the development of learning skills. Study skills that students developed include basic skills such as performing a literature search, and high-order skills such as critical appraisal of knowledge. One student's remark of "not wanting to be fed, but wanting to learn

actively" sheds light on students' inherent desire to learn independently as well as on the importance of learning environments in shaping learning behaviours.

As revealed by students' comments, the learning environment of this IBL subject is one of facilitation. Firstly, a clear definition of students' roles better prepares them to be active learners in the learning process. It is widely known that one's role can be enhanced when there are clear role expectations (Marks, & MacDermid, 1996; Takei, Johnson, & Clark, 1998). Hence, learning can be promoted when students are given clear expectations of their learning outcomes. Secondly, IBL gives the opportunity to formulate individual learning issues. By doing so, students have a sense of control and mastery of the learning outcomes, which in turn motivates them to learn. Kielhofner (1995) suggests that the ability for an individual to exercise a locus of control is essential for motivation. Moreover, an intrinsically motivating task further motivates an individual to engage in it, as illustrated by students' motives in looking for solutions to problems. Thirdly, the use of both small group learning and real-life scenarios promotes in students a responsibility for their own learning. Small group learning produces peer pressure that compels students to be serious about learning, as they do not want to be regarded as uncooperative members of the group. In addition, group learning creates invisible competition between group members that further drives students to learn better. The findings from this study appear to be congruent with findings of many studies related to pressure and performance, i.e. an individual performs better when there is optimal pressure (Jex, 1998; Steward, Lam, Betson, Wong, & Wong, 1999). The use of real-world scenarios also stimulates students' motives in searching and gathering information to analyse issues related to the problems. Because the characteristics of real-life scenarios are ill-defined and open-ended, students are required to make assumptions about the scenarios and to identify appropriate learning issues.

Constraints of Inquiry-based Learning Methodology

Students of this study had been exposed to a didactic form of teaching-learning for 13 years, and so they were used to a learning environment where teachers gave clear directions for learning and provided correct answers to problems (Morris, 1985). The change of teaching-learning strategy from a 'spoon-feeding' mode to an open and active one is likely to create anxiety and stress in students who have long been passive learners. Also, students' concerns about the scope of learning reflected their feelings of insecurity resulting from independent learning, in which the provision of concrete guidelines and answers is not uncommon. In addition, this subject was the only one that required students to find actively the solutions to problems, and so students' anxiety and worries are understandable.

IBL is a new learning experience for students. To be competent with this teaching-learning methodology, students must apply appropriate study skills at different stages of IBL. However, most students are not familiar with study skills, such as performing a literature search, critically analysing, and integrating information, particularly at the beginning of the subject. The reason for this is because there has been a lack of structured opportunity for students to develop and practise these study skills in lecture-based subjects. As the development of study skills requires time, it is understandable that students will not change into competent independent learners after a short period of exposure to IBL. The lack of competence in applying learning skills, in turn influences students' learning effectiveness. For instance, their frustration at experiencing limited library resources is largely due to their lack of experience in conducting an extensive literature search. Most students regard books and journal articles as the only resources in the library; few realise the powerful source of electronic databases. Moreover, students are inclined to search for easy-to-read textbooks in which they are able to obtain easily understood concepts. Fundamental textbooks often are not available because they are on loan during term-time. The latter observation also reflects students' inability to read and analyse

findings of journal articles. Owing to students being unable to conduct a literature search, both the learning process and outcomes are impeded.

Conclusion

This study demonstrates the importance of a consistent learning environment in developing a firmly established learning attitude and learning pattern. Teaching a subject based on IBL principles and process in a curriculum driven by traditional methods is a challenge to teachers who aim to foster in students the ability to be active and independent learners. Students who are exposed to a subject delivered in IBL mode, face the challenge of developing active learning attitudes but also, they are challenged to change their learning approach in other subjects using a traditional teaching-learning methodology. Having said that, the IBL approach promotes a culture of independent learning and facilitates the development of study skills. Moreover, the myth of Chinese students as 'rote learners' is not supported, as students can be facilitated to learn in a more active manner when an appropriate learning environment is provided.

Acknowledgements

References

Biggs, J. B. (1991). Approaches to learning in secondary and tertiary students in Hong Kong: Some comparative studies. *Educational Research Journal, 6*, 27-39.

Bujan, J., Havlin, J., Hendzell, P., Lokes, M., & Pries, M. (1996). *Increasing students' responsibility for their own learning.* Illinois: IRI/Skylight.

Carlson, M., Fanchiang, S., Zemke, R., & Clarke, F. (1996). A meta-analysis of the effectiveness of occupational therapy for older persons. *American Journal of Occupational Therapy, 50*(2), 93-97.

Census and Statistics Department (1997). *Hong Kong Population Projections 1997-2016.* Hong Kong: Government Printers.

Chung, C. C. J. (1995). Attitudes of occupational therapy students toward older people in Hong Kong. *Occupational Therapy International, 2*, 278-290.

Jex, S.M. (1998). *Stress and job performance: Theory, research and implication for managerial practice.* London: Sage Publications.

Kember, D., & Gow, L. (1991). A challenge to the anecdotal stereotype of the Asian student. *Studies in Higher Education, 16*(2), 117-128.

Kielhofner, G. (Ed.) (1995). *A model of human occupation: Theory and application* (2nd ed.). Baltimore, MD: William & Wilkins.

Krueger, R. A. (1994). *Focus groups: A practical guide for applied research.* Thousand Oaks, CA: Sage Publications.

Marks, S. R., & MacDermid, S. M. (1996). Multiple roles and the self: A theory of role balance. *Journal of Marriage and the Family, 58*, 417-432.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded handbook* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Morgan, D. L. (1988). *Focus groups as qualitative research.* Newbury Park, CA: Sage Publications.

Morris, P. (1985). Teachers' perception of the barriers to the implementation of a pedagogic innovation: A South East Asian case study. *International Review of Education, 31,* 3-18.

Powell, J. H. (1989). The reflective practitioner in nursing. *Journal of Advanced Nursing, 14,* 824-832.

Seifer, S. (1998). Service-learning: Community-campus partnership for health professions education. *Academic Medicine, 73,* 273-277.

Steward, S. M., Lam. T.H., Betson, C.L., Wong, C. M., & Wong, A. M. P. (1999). A prospective analysis of stress and academic performance in the first two years of medical school. *Medical Education, 33,* 243-250.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory, procedures and techniques.* Newbury Park, CA: Sage Publications.

Takei, Y., Johnson, M. P., & Clark, M. E. (1998). Academic achievement and impression management as factors in the grading of white junior high pupils. *Sociological Perspectives, 41,* 27-48.

Watkins, D., & Biggs, J. B. (1996). *The Chinese learner: Cultural, psychological and contextual influences.* Hong Kong/Melbourne: Comparative Education Research Centre.