# Enhancing Critical Thinking and Daily-Life Application in a Psychology Course: A 'Case Album' Approach

***J.P. Leung, Darius K.S. Chan and Catherine S.K. Tang***

*The Chinese University of Hong Kong*

## Abstract

To improve teaching effectiveness of a psychology course on Personal Growth, a different teaching approach known as the 'case album' was introduced. For every topic covered in the course, students were required to collect daily life examples and cases of personal experience and put them into a case album. They analysed these cases and commented on how these cases relate to the course content and theories learned. Students in the class were also divided into tutorial groups within which cases were shared and discussed. By this approach, we expect to enhance students' inclination on critical thinking and daily life application of the knowledge learned from the course. Following the action learning model, we conducted three cycles of the procedures with the first one as a pilot study. In the pilot study (cycle I), we fine-tuned the instructional model of the case album, and tested some instruments and research designs. Eventually, a number of outcome measures were identified for evaluating the effect of intervention including standard psychological questionnaires, scales for evaluating the case album and tutorials, standard course evaluation and exam results. In cycle II of the study, we had a class of 45 of mainly psychology major students. We found a number of positive results in terms of the psychological measures of study motivation. In cycle III of the study, further improvements had been made on the instruction method and the outcome measures. The results show that students consistently rated very highly the course and results found in cycle II were also replicated. The effectiveness of the case album approach for promoting critical thinking and daily life applications were discussed in light of the results.

## Introduction

### The Teaching of Psychology

Psychology is a discipline that fascinates many students who have an interest in understanding the behavior of oneself and other people. However, the teaching of psychology at the college level is not without challenges (King, 1982). For instance, some courses within psychology (e.g., statistics, research methodology, etc.) are not as attractive as other courses (e.g., social psychology, personality, etc.) for various reasons. Teachers often need to use their imagination and ingenuity in designing a course, including the preparation of stimulating materials and activities for their classes (Elliot, 1993). The professional journal *Teaching of Psychology* has provided a good platform for teachers to exchange ideas, innovations and insights of teaching psychology.

Apart from the subject matter, other challenges for psychology teachers include promoting critical thinking in students and ensuring application of psychological knowledge learned to real-life situations. Indeed, critical thinking is so important for success and survival in a modern society that educators have often included it as one of the major educational goals. In terms of

Bloom's (1956) taxonomy of educational objectives, critical thinking includes the ability of the learner to analyse, synthesise and evaluate. Teachers must find effective ways of fostering these useful and important skills of their students. The pressing need to promote critical thinking skills has been witnessed by a special section devoted to this topic in a recent issue of *Teaching of Psychology* (No. 1, Vol. 22). Entitled 'Designing the instructional process to enhance critical thinking across the curriculum,' this section put together a collection of related articles written by experienced teachers in the discipline. Various approaches for achieving the goal were discussed, including the use of questioning (King, 1995), conference style learning (Underwood and Wald, 1995), case study pedagogy (McDade, 1995) and others (e.g., Jaboubek, 1995). They delineated the advantages and practicality of the methods and often furnished brief outcome results to demonstrate the utility of these approaches. However, the data reported often consisted of informal observations rather than systematic research evidence.

To promote application of course materials to daily-life settings requires strategies that encourage linking classroom learning with the outside world. Some psychologists (e.g., Lawson, 1994; Rider, 1992; Sorensen, 1976; Ward, 1985) found that students can learn to apply knowledge of psychology from working on events and stories reported in popular media. For example, Rider (1992) taught her general and developmental psychology courses with this method. Set up as one of the assignments, students prepared portfolios of cases by collecting magazine articles and cutting newspapers that illustrated concepts covered in the courses. For each clipping, students discussed the event(s) with respect to a psychological concept, theory or research findings learned in class or in the textbook. Results from the end of course evaluation found that students liked the assignment and perceived them as useful both for increasing knowledge about the topics and application of course materials to the outside world. Again, Rider's (1992) report fell short of presenting rigorous research evidence to support the positive outcomes being claimed.

## The Case Album Approach

We fully endorse our colleagues on the two objectives in teaching psychology: critical thinking and knowledge application. Based on the literature and our own experience, we designed an instructional approach known as the 'case album' for teaching psychology. Having considered effective strategies commonly used in promoting critical thinking and application of knowledge, the 'case album' consists of two major components, namely, case preparation (e.g., McDade, 1995; Rider, 1992) and tutorial (e.g., Underwood and Wald, 1995). Prepared by each student, the 'case album' was a collection of cases guided by topics covered in a course. The cases came from real life examples as delineated in newspapers, magazines, movies; also they could be personal experiences and observations from other sources. Students then presented their cases during the tutorial where they shared their thoughts with others in a small group setting. Students discussed the appropriateness of the cases and made interpretations based on the materials and theories learned from the course. Cases were handed in for scoring and students were given feedback as soon as possible.

A course on Personal Growth was selected for testing the effectiveness of the 'case album' approach because this course covered topics highly related to daily life situations. The course was designed for providing knowledge in adaptation and personal growth so that students could develop more effective skills in social interaction and coping with daily hassles. The course was run frequently and so was very suitable for research purposes. Since its inception, Personal Growth has been offered every year, often during both semesters of the academic year. The course is very popular among students and every time it is over subscribed with a large margin. The quota is set at 40 which is considered an optimum number for this kind of course. Both psychology and non-psychology majors could select this course but priority has been given to the psychology students.

### The Study

The study adopted the action learning paradigm or ALP (Kember and Kelly, 1994) and we conducted a total of three course cycles at the conclusion of the project. We planned a two-year investigation period for evaluating the 'case album' approach for teaching a psychology course. The first cycle of the study was completed after six months and its results were presented in the interim report of the Action Learning Project. The first cycle employed an experimental-control group comparison paradigm and found no significant differences between the two groups. A close examination of this initial course cycle revealed a number of shortfalls including sampling problems, social comparison effects favoring the control group, insensitive instruments and loose tutorial format. For instance, we used the SPQ (Biggs, 1987) for assessing study approach and strategies but did not find any significant differences between the two groups. Upon deliberation, it was realised that scales of the SPQ measured overall and global tendency of study orientation but it usually took more than a short course to change this kind behavior. Nonetheless, the data provided important information for improving the instruction procedure and the method of assessing intervention outcomes. Hence we treated the first course cycle as an information gathering exercise through which we discovered the psychological and pedagogical aspects of applying the case album approach. Based such experiences, a number of improvements had been made on the instruction methods and assessment instruments.

## The Second Course Cycle

This cycle was carried out during the first semester of the 1995-96 school year. Only one class of Personal Growth was available and enrolment included only psychology majors. The class size was set at 40 and consisted mainly of first year students. The composition of the class can be seen from Table 1. One of the research team members (D. Chan) served as the course instructor. The tutorial was conducted by a tutor who also scored the case albums.

*Table 1: Demographic Information of Students in Cycle2 and Cycle 3*

| | Cycle 2 | Cycle 3 |
|---|---|---|
| No. of Participants | 40 | 40 |
| No. of Male | 11 | 11 |
| No. of Female | 29 | 29 |
| Mean Age | 20 | 20 |
| Enrolled Year | | |
| a) Year 1 | 31 | 30 |
| b) Year 2 | 3 | 5 |
| c) Year 3 | 0 | 1 |
| d) Year 4 or above | 6 | 4 |

### Design and Procedure

We just had one class running during the second study and employed a basic pre-post experimental design.

The class was divided into five tutorial groups and each group met at a different time. Not all topics covered in the course were included in the case album. Four prominent topics (interpersonal

attraction and love, gender role, communication, and stress and health behavior) had been selected for inclusion. One tutorial was conducted for each topic. During the tutorial, students brought along the prepared cases and discussed all the cases after a presentation. A tutor guided the proceeding of the tutorial and prompted questioning from the group. Students also completed a tutorial assessment form at the end of each tutorial.

In addition, every student needed to hand in supplementary notes within four days of the tutorial class. Students were asked to write down their comments and the kind of insight gained as a result of the discussion during the tutorial.

## Instruments and Assessment Procedures

The effectiveness of the 'case album' approach was assessed both in terms of process and outcome variables. The former type of evaluation consisted of higher learning goals and personal perceptions while the latter type of evaluation consisted of performances on course work and exams. With these goals in mind, the following assessments had been conducted:

1. **Questionnaire:** A study questionnaire (in Chinese) was put together and was administered to the class at the beginning and the end of the course. The questionnaire consisted of a number of scales including:

   • *Expectation for the course*: For assessing students' expectations of the course.

   • *Course specific SPQ*: This questionnaire involved three questions from each of the six categories of the learning approach and strategy measures as tapped by the Study Process Questionnaire or SPQ (Biggs, 1987). Questions were phrased to measure students' perception of how the course changed their learning motivations and strategies.

2. **Tutorial and Case Album Evaluation:** Students completed a tutorial evaluation form after each tutorial. They were asked to evaluate the tutorial of this course with respect to tutorials of other courses. The first seven statements assessed subjective opinions on the effectiveness of the tutorial for promoting critical thinking and application. The rest of the items assessed other aspects of the tutorial including whether the tutorial was interesting, enjoyable, too long, etc. Students also filled in a case album evaluation form at the end of the semester that included a subset of the tutorial evaluation items (see Table 4).

3. **Test/exam performances:** Test/exam scores (means, standard deviations and other statistics). The final exam included one special question on application and the content of this question was analysed.

4. **Course evaluation**: Administered at the conclusion of the semester was a course evaluation questionnaire which was a normal practice within the Psychology Department, CUHK.

5. **Interviews**: In-depth interviews were conducted for a sample of students (10 from each class) on various topics including their expectation of the course, their views on lecturer, tutorials, assessment and exam. The interview tapes were later analysed.

## Results and Discussion

Table 2 presents a summary table of the pre- and post- mean scores with SDs and F-statistics for all scales of the study questionnaire, except for the scale on student expectation. Some differences were found in the course specific SPQ. A shortened version of the SPQ , the course specific questionnaire assessed students' study approaches and strategies on the Personal Growth course. Three scales revealed differences between pre- and post- conditions. Achievement Motivation ($F=5.17$, $p < .05$), Achievement Strategy ($F=19.92$, $p < .001$) and Surface Strategy ($F=6.3$, $p< .05$)

decreased at the end of the course. These results show that students became less achievement oriented toward the Personal Growth. According to Biggs (1987), learners with this orientation only take pride in obtaining high grades and work to maximise the chances of achieving. Thus the concern is about the product but not the learning process. In addition, our students also reduced their application of surface strategy, indicating that they were less satisfied with 'just getting by'. This change therefore complemented the decrement of achievement orientation.

*Table 2: For Cycle 2, mean pre- and post-scores (with SDs) and F statistics of the course specific SPQ in the study questionnaire.*

| Subscales | Mean (Pre-Score) | Mean (Post-Score) | F-value |
|---|---|---|---|
| Achievement Motivation | 2.77 (.93) | 2.37 (.96) | **5.17* (Pre>Post)** |
| Deep Motivation | 3.22 (.69) | 3.39 (.69) | 2.91 |
| Surface Motivation | 2.94 (.82) | 2.59 (.78) | 3.00 |
| Achievement Strategy | 2.95 (.90) | 2.13 (.62) | **19.92*** (Pre>post)** |
| Deep Strategy | 3.28 (.67) | 3.21 (.69) | 1.15 |
| Surface Strategy | 2.45 (.75) | 2.19 (.74) | **6.30* (Pre>Post)** |

**Note**: *, p<0.05; ***, P<.001.

Results on course expectation were presented in Table 3 which shows the scores and statistics for all items. There were three differences found. Students felt that the course was less difficult (F=5.75, p<.05) and had a less demanding workload (F=7.55, p< .01) than they initially expected. They also felt that the course was more relevant to their lives (F=4.66, p< .05) after they had completed it. No change was obtained from the remaining measures of the study questionnaire.

*Table 3: For Cycle 2, mean pre- and post-scores (with SDs) and F statistics of each item in the student expectation scale.*

| Expectation | Mean (Pre-Score) | Mean (Post-Score) | F-value |
|---|---|---|---|
| Interesting | 5.40 (1.11) | 5.75 (.84) | 2.04 |
| Difficult | 3.73 (1.36) | 2.95 (1.30) | **5.75* (Pre>Post)** |
| Relevant | 5.58 (1.06) | 6.10 (.74) | **4.66* (Post>Pre)** |
| Interpersonal relationship | 5.28 (1.01) | 5.03 (1.00) | .84 |
| Understand human nature | 5.25 (.95) | 5.45 (.75) | .08 |
| Heavy workload | 4.08 (1.27) | 3.33 (1.00) | **7.55** (Pre>Post)** |
| Variety | 5.03 (1.14) | 5.00 (.95) | .23 |
| Trained critical thinking | 5.21 (1.20) | 5.15 (1.14) | 1.15 |

**Note**: *, p<0.5; **, p<0.01.

As for the evaluation of tutorials, results were generally positive. With few exceptions, the scores were greater than 3.0 or the neutral point. The item that tended to fall below 3.0 was 'the tutorial was too long', showing that students thought the tutorial was of the right length. According to the scores, students normally considered the tutorial helpful in promoting critical thinking skills and applications of material learned from the topics. Scores from other items also demonstrate that students thought highly of the tutorial and the guidance provided by the tutor. On the whole, the tutorial format gained support from the participants.

Consistent with the tutorial evaluation, student rated the case album as a whole quite highly as can be seen from data presented in Table 4. Ratings were around 4 or closed to 4 except for items 8 (too much preparation required) and 9 (need a lot of effort to complete). Student also thought the case album assisted them in critical thinking (items 3, 4 and 5) and application of theories (items 1, 2 and 6). In terms of difficulties encountered over topics (item 10), students thought that Communication was the hardest while Love & Personal Attraction was the easiest.

*Table 4: For Cycles 2 and 3, mean ratings (with SDs) of each item in the case album evaluation*

| Question | Cycle 2 | Cycle 3 |
|---|---|---|
| 1. Apply to daily life | 4.05 (.55) | 4.10 (.67) |
| 2. Understand & explain people's behavior | 4.10 (.63) | 4.08 (.69) |
| 3. Promote critical thinking | 3.93 (.66) | 3.80 (.82) |
| 4. Understand course content | 3.95 (.60) | 3.85 (.74) |
| 5. Stimulate my interests | 4.03 (.70) | 3.50 (.78) |
| 6. Practical | 4.10 (.64) | 3.98 (.73) |
| 7. Interesting | 4.10 (.64) | 3.90 (.74) |
| 8. Too much preparation work | 3.05 (.78) | 3.05 (.99) |
| 9. Put in a lot of effort | 2.72 (.78) | 2.90 (1.01) |
| 10. Topic difficulties | | |
| a. *Interpersonal attraction & love* | 2.33 (.92) | 2.33 (.86) |
| b. *Communication* | 3.45 (.96) | 3.63 (.93) |
| c. *Gender role* | 2.80 (.76) | 2.73 (.91) |
| d. *Stress & health behavior* | 2.62 (.93) | 2.90 (.98) |
| Mean of No.1-9 | 3.80 (.35) | 3.70 (.45) |

On the course evaluation conducted by the department, students generally rated the course in a favourable light. The overall evaluation rating of the course was 4.16 (out of a maximum of 5) which was the second highest within the department. In particular, they rated the tutorial as very satisfactory in terms of stimulating their interest in (M=4.22; 5-point scale) and helping them to understand subject matter (M=4.11; 5-point scale) of the course. These results are consistent with those obtained by our tutorial evaluation exercise conducted after the tutorials.

For the performance in the final exam, the special application question was of special interest to us. Here students were presented with a case scenario and made interpretations and explanations based on the material taught in the course. Most students were able to do this question well and score a high proportion of the marks (M=75, SD=7.57) from that question.

As for the term end interview, students were very satisfied with the course in general and thought that they picked up some useful knowledge. They all pointed out the course was different from other solely content courses which emphasised mainly on hard and dry materials.

These results are encouraging and we decided to run a third cycle of the case album and see if the same results could be replicated with a different class of students.

## The Third Course Cycle

Following the ALP approach (Kember and Kelly, 1994), we reviewed the results from the past two cycles for problems and possible ways of improvement. It was decided the same instruments should be used so that previous results could be replicated. We put more structure into the case album and the tutorial. Students were provided with a clear outline for preparing the case album such as length and format. They were also instructed that speaking up during tutorials would be counted as part of class performance.

This cycle of the study was conducted in the second semester of the 1995-96 academic year. Conditions of the class for Personal Growth remained unchanged. The class composition can be seen from Table 1.

### Design and Procedure

The design and procedure used here were the same as in Cycle Two.

### Instruments and Assessment Procedures

The instruments and assessment procedures used here were the same as in Cycle Two.

### Results and Discussion

The results from Cycle 3 more or less replicated those from Cycle 2.

Means and statistical test results from the study questionnaire are summarised in Table 5. In terms of course specific SPQ, Achievement Motivation ($F=5.19$, $p< .05$), Surface Motivation ($F=13.31$, $p< .01$), and Surface Strategy ($F=8.57$, $p< .01$) decreased significantly at the end of the semester. These were positive changes, especially with the surface motivation and strategy orientation. They indicated that students became less surface oriented at the completion of the course.

*Table 5: For Cycle 3, mean pre- and post-scores (with SDs) of the course specific SPQ in the study questionnaire*

| Subscales | Mean (Pre-Score) | Mean (Post-Score) | F-value |
|---|---|---|---|
| Achievement Motivation | 3.03 (1.02) | 2.59 (1.04) | **5.19* (pre>post)** |
| Deep Motivation | 3.12 (.87) | 3.29 (.72) | .31 |
| Surface Motivation | 3.00 (.76) | 2.49 (.77) | **13.31** (pre>post)** |
| Achievement Strategy | 2.51 (.91) | 2.16 (.82) | 3.80 |
| Deep Strategy | 3.11 (.68) | 3.10 (.73) | .45 |
| Surface Strategy | 2.39 (.59) | 2.04 (.61) | **8.57** (pre>post)** |

**Note**: *, p<0.05; **, p<0.01.

In terms of expectation, results both similar and different from the previous cycle were found. Table 6 shows the scores and statistical results for each of the items. Like the last cycle, students felt that the course was less difficult (F=24.93, p<.001) and it had less workload (F=10.00, p< .01) than they initially expected. However, they felt that the course was not able to improve their understanding of interpersonal relationships (F=4.36, p< .05) at the end of the semester. This is perhaps the only negative result we had obtained so far.

*Table 6: For Cycle 3, mean pre- and post-scores (with SDs) and F statistics of each item in the student expectation scale*

| Expectation | Mean (Pre-Score) | Mean (Post-Score) | F-value |
|---|---|---|---|
| Interesting | 5.46 (1.19) | 5.46 (1.02) | .01 |
| Difficult | 5.54 (.87) | 4.49 (.99) | **24.93*** (Pre>Post)** |
| Relevant | 5.78 (1.21) | 5.68 (1.06) | .05 |
| Interpersonal relationship & love | 4.60 (1.14) | 5.11 (1.17) | **4.36* (Post>Pre)** |
| Understand human nature | 4.92 (1.19) | 5.38 (1.42) | 2.49 |
| Heavy workload | 4.87 (1.29) | 4.08 (1.30) | **10.00** (Pre>Post)** |
| Variety | 4.84 (1.09) | 5.03 (1.17) | 3.27 |
| Trained critical thinking | 4.78 (1.42) | 5.03 (1.19) | 3.3 |

**Note:** *, p<0.5; **, p<0.01; ***, p<.001.

Students evaluated the tutorial and the case album positively, thus replicating the results obtained in the last cycle. For the tutorial, with the exception of item 14, the ratings were all greater than 3.0 or the neutral point. Item 14 asked whether 'the tutorial was too long' and

students thought the length was appropriate. Students normally considered the tutorial helpful of promoting critical thinking skills and applications of material learned from the topics. Scores from other items also demonstrated that students thought highly of the tutorial and the guidance provided by the tutor. On the whole, the tutorial format gained support from the participants. For the case album evaluation, Table 4 presented the means and SDs of pre- and post-scores. The results replicated those obtained in Cycle 2. Again, students thought that Communication was the hardest topic while Interpersonal Attraction and Love was the easiest.

On the Course Evaluation conducted by the department, students rated the course 4.08 out of 5 points. This was the second highest rated course within the department. The tutorial was rated as stimulating their interest in (M=4.05) and also help understanding the subject matter (M=4.29) of the course. These results are consistent with those obtained by our tutorial evaluation exercise conducted after the tutorials and with those from cycle 2.

Observations similar to cycle 2 could be made on the final exam performance and the term end interview.

## General Discussion

The case album was designed for enhancing critical-thinking skills and application of knowledge acquired from the psychology course. First, students became less surface oriented or more deep oriented in their study approach at the end of Personal Growth course. Instead of being satisfied with simply getting the task out of the way (surface approach), students were more committed to learning for meaning (deep approach). As Biggs (1987) described, with a deep approach a student will possess a great deal of relevant content knowledge; operate at a high or abstract level of conceptualisation; use optimal strategies for handling the task (p.11). Hence we can safely assume that the case album had raised students' level of critical thinking on the course materials. Second, students rated highly the tutorial, the case album, and the course as a whole. These findings indicate that the case album approach was accepted by students as a viable alternative to traditional teaching approaches. With the cases prepared and the topic very clear, the discussion during the tutorial could be very focused and relevant. The opportunity of hearing about cases from other group members also widened the scope of applications of the theories covered by the course. Indeed, students agreed that the case album helped them understand the subject matter, think critically about various issues, and apply the knowledge to daily life. In general, we obtained some positive results that agree with previous studies using more or less the same approach for teaching psychology (e.g., Beer, 1985; Rider, 1992).

However, the findings on study approaches may be course specific. Changes in the study approach used for Personal Growth were observed in the course specific SPQ (administered in the second and third course cycles) but not in the original SPQ scales (administered in the first course cycle). Thus the study orientation acquired in this course may not have noticeable effect on students academic behavior in other courses. Transfer of learning has always been a problem that annoys educators. According to empirical research, generalisation from one setting to another or from one subject matter to another subject matter is an exception rather than the rule (e.g., Newell and Simon, 1972). It will require coordination among different courses offered by a given curriculum to enhance the transfer of learning. Students will not acquire the general tendency of thinking critically and applying learned knowledge unless more courses include such skills as educational objectives and that instructors adopt strategies for encouraging these skills. The case album appears to be a viable alternative format of teaching for achieving these goals.

Although we obtained some positive results, the utility of the case album approach must be further verified empirically. In future research, at least two areas can be improved. First, a more sophisticated research design should be employed in order to reveal the strengths and

weaknesses of the approach. Cycles 2 and 3 involved a single class with pre- and post- treatment measures but this design is far from satisfactory because no meaningful comparisons can be made. We did try a different design in the first cycle of the study. We had a group design comparing the experimental class with a control class. Both offered in the same semester, these two classes ran parallel to each other except for the case album and tutorial arrangements. This design was good enough in the light of difficulties often encountered in the educational settings. Unfortunately, we failed to foresee an influential confounding factor that threw doubts on our data. What happened was that students from the two classes compared workload. The experimental class thought that they were unfairly treated by the heavy workload imposed by the case album! Future studies must be careful in avoiding confounding of this kind. Apart from traditional research designs, the action learning paradigm (e.g., Kember and Kelly, 1994) also provides one viable approach to research whereby progressive improvements are introduced through multiple cycles of instruction.

Second, researchers must locate or develop instruments appropriate for assessing the dependent variables, critical thinking skills and application skills in this case. There might well be psychological scales for assessing thinking skills but these measures often tapped global and general constructs. Given that most courses last for just one semester, they will not produce long-lasting and deep-seated changes in students. When assessing students with these common psychological tests, the chances are that no difference will be found. Our study is a good case in point. At the initial stage, we did employ the SPQ (Biggs, 1987) for assessing study approaches and strategies but found little changes in scores. The SPQ measures the general motivation and behavioral tendency in learning and these orientations represent the sum total of one's past learning history. Based on the SPQ, we developed a course specific instrument for 'Personal Growth' and some differences were revealed by the test. The approach of case album might have changed students study orientation from surface approach to more deep approach and also had a small effect on reducing achievement orientation. For the same reason, other psychological measures such as self-concept, assertion, and life satisfaction showed no significant changes at the end of the course. To better assess our teaching innovations, researchers must put more work into selecting and developing appropriate instruments that are sensitive to short term intervention(s).