The use of PBL in a General Education course dealing with Life and Ethics: Students' learning perspectives

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Abstract

The purpose of this article is to report the student's viewpoints on learning issues on life values and ethical considerations in a problem-based learning (PBL) environment via an elective course of general education (GE) at China Medical University, Taichung, Taiwan. This "Life and ethics" course integrated the learning of life and biomedical sciences with the appreciation of humanity and humility towards our living world. To apply ethics through PBL in early stage of university learning is not only to achieve the goals of general education in achieving the balance and multiplicity of professional knowledge, skill and attitude, but also to enable students to develop self-directed and life-long learning skills in bioethical issues which are expected of all health science professionals, not confined to medicine. A test-run of the course was performed before its official offering. Students who took the course in 2009 and 2008 were given questionnaires for evaluation before and after the course. Information covering 3 domains were gathered. They include satisfaction over the course, learning experience and learning attitude. Majority of students expressed overwhelmingly positive satisfaction over this course. An elevation of satisfaction between two years was also noted. Students appreciated the experience of interaction with teachers and being respected in rising and expressing their own ideas. Besides, there were a number

of positive changes of attitude toward learning amongst students after they have completed the course. However, both self-evaluation and peer evaluation showed the students were more confident in listening and accepting diverse voices, but still lack the ability to express and communicate their ideas. This may reflect Asian students' traditionally typical learning style. All of the above observations reinforce the suggestion that PBL is more conducive to effective learning and should be applied to the earlier learning stage in medical university.

Introduction

Ethics, being an essential part of the cognitive subject of humanity, is also a major important aspect in higher education spanning across almost every profession. The concept and practice of ethics is not only limited to a particular coursed given in any particular year of university education, it is a life-long learning subject for self-enhancement. Therefore, a topic such as "Life and Ethics" concerns not only with the living of our own self being, but also the lives of all living creatures surrounding us and interacting with us, and thus affecting our own being. At the microcosm level, it represents a bioethical domain dealing with our well conscientious being and existence; at the macrocosm level, learning about Life and Ethics represents a cultivation of attitude and compassion towards an appreciation for humanity and a respect for the natural environment (Hwang, 2004).[1] Furthermore, it has been well said that, "Before becoming a medical doctor, learn be a caring person first" (Hwang, 1996).[2]

General education, by definition, is an educational concept in which students learn to acquire generally diversified life-coping skills via being exposed to a broad spectrum of knowledge, skills and attitudes on the theoretical bases of adult learning, holistic

learning and integrative learning in order to prepare themselves for a specialized professional. Thus, general education is practically an integrative learning in a multidisciplinary environment (Lee,2008). [3]

In Taiwan, general education precedes professional education, in many disciplinary areas, usually spanning over the initial two years in university education. Most educators would probably agree that general education in university should not be viewed as a simplistic extension of the secondary school education, in which pedagogic approaches encourage passive attitude via rote learning, nor should it remain to be discipline-based teacher-centered didactic transmission of professional knowledge and skills, negligent in appreciation for humanity and values in life (Tai, 2008).[4] This is of particular importance in health care education (medicine, Dentistry, nursing, pharmacy, public health physical therapy, etc), as our students come directly from the high school cohort, at a time when these young students just advance from adolescence into adulthood with limited life experience and social skills. On the other hand, over-emphasis on compassion for humanity and liberal art, but losing sight on the importance of professional knowledge is also not the original intention in establishing general education in university (Huang, 2008).[5] Therefore, a successful general education should not only rely on informed balance between professional knowledge, skill and attitude, and related general appreciation for professionally associated issues on humanity and liberal arts, but also on the ways through which such educational instructions are being transmitted to achieve learning and the knowledge acquisition is being exercised upon the attainment of professional behavior within the real-life scenarios. Bioethics in general education serves the purpose of mediating the sense of responsibility towards life via the cultivation of personable sciences, self-awareness and altruistic compassion at an early stage of university education. Such formulation of the values for life must be part of a knowledge–laden process (Macer,2004;

Conner,2003).[6, 7]

It is not surprising to note that courses in general education in most universities in Taiwan have always been under heavy influence of traditional pedagogy, which fosters passive learning via didactic teaching and learning instruction is characteristically teacher-centered, discipline-based, text-book oriented and examination-driven (Kwan, 2009).[8] Teaching of ethics, if at all offered, would be of no exception. In recent years, considerable improvement has been made, including more student self-directed (via student discussions or presentations), scenario-based (as in watching movies) and real life-oriented (in line with everyday living). Amongst many innovative approaches, the concept of PBL in its entirety represents the most powerful one.

PBL is a pedagogic philosophy originally derived from constructivism educational philosophy which encompasses many learning theories in higher education and was first developed at McMaster University in 1965 as an innovative education for the training of medical professionals (Barrows, 1980)[9] and has since been restructured and sprouting latter into many forms (See Neville & Norman, 2007 for historical development),[10] including project-based learning, outcome-based learning, scenario-based learning and alike. PBL started to be better noted in the Asian region in the mid to late 1990s and has still been limited primarily to the health care education (see Kwan, 2009a for a comprehensive review).[8] The essence of this learning philosophy is student-centered, problem-based, inquiry-oriented and self-directed. Its aim is to construct the ability and establish the attitude in learners to learn to cope with the changing environment of the learner along their learning processes. The ultimate aim of PBL is to achieve life-long learning (Lee & Kwan, 1997; Kwan, 2009b).[11, 12]

Reports on student's learning of Life and Ethics (as oppose to teaching) with the use of PBL in General Education course is relatively sparse, especially in the Asian region (Hsin, 2009)[13]. Thus, the primary objective of this communication is to report

the student's viewpoints on learning life values and ethical issues in a PBL environment in a traditional medical school in Taiwan, where a hybrid-PBL curriculum has been implemented for years in undergraduate education in medicine (Shen, 2009). [14]

Methods

The course design: students, tutors and PBL training

Life and Ethics, an elective two-credit unit course (36 hours in total) as an integral part of the general education offered during the 2nd semester of academic year of 2007 and 2008, was open to all first and 2nd year students (2007 – all 1st year students; 2008 – 75% 1st year students and 25% 2nd year students), who expressed interest on this topic irrespective of the nature of the professional colleges they belong to (Mainly from the college of Medicine, Chinese Medicine and Pharmacy).

The entire course consisted of introductory lectures (on orientation and basic ethical theories), group discussions on ethical issues and life values in two selected movies as PBL problems and small group discussions on written scenarios using 3 PBL trigger problems, each takes 2 sessions with 4-6 hours discussion period. The selected movies presented scenarios on issues related to "Abortion" and "Euthanasia". Those 3 trigger problems were selected out of 5 problems on life and ethics issues based on a prior test-run result (see below). They are concerned with commonly encountered life values and ethical issues represented as "Animal rights", "Genetically modified food" and "Privacy on genetic information".

PBL problems were selected and designed by one of the authors, Dr. HC Hsin, whose research expertise is in the area of bioethics and were reviewed by 3-4 members of the university PBL task group (with strong knowledge base relevant to each problem) and were finally approved by the task force coordinator, Dr. CY Kwan,

who has had more than 2 decades of PBL experience at McMaster University.

Unlike similar courses offered in other universities as conventional didactic lectures in large lecture theater, PBL small group discussion approach with student number limited to not more than 50 persons is the primary instruction for this course. Forty six and 40 students completed the course in these two years. In 2007, teachers with prior experience in PBL tutoring from various colleges and departments served as tutors (with 5-7 students per group) whereas in 2008, 5 teachers were recruited (8 students per group).

All students and teachers have officially attended, at least once (3-5 hours), the PBL workshops, which were offered by the Center for Faculty Development two times per year. Nonetheless, some tutors have attended PBL workshops many times.

The test design: Test-run of PBL session before course offering

In 2006, we performed a preliminary test-run of this course with 11 students coming from different departments using 5 different cases on a number of ethical issues to evaluate students' satisfaction with the PBL cases in terms of 6 attributes: their pertinence to real life situation, clarity on the scenarios, students' motivation for learning, level of difficulty and potential for open-ended discussions. Those PBL cases assigned with an average of greater than 3.5 out of 5-point scale were selected for use in this Life and Ethics course. Qualitative verbal feedback was also obtained via voluntary individual interviews with 2 students and group interview with 7 students at the end of the semester after they have taken the test-run course. These qualitative subjective viewpoints included students' appreciation for being able to have the opportunity to experience rational and critical thinking, readiness for learning in multiple perspectives, feeling of being respected and confidence in self-directed acquisition process. Overwhelmingly positive responses were obtained. This test-run has thus helped laid

down the foundation for our official offering of this elective course in 2007 and 2008.

The process design: PBL small group discussion process

The PBL process of typical original McMaster model was adopted. It involves brainstorming and setting learning objectives in the first tutorial, independent study and searching for information (outside tutorial), interactive discussions, feedback and reflective wrap-up during the 2nd tutorial. For the PBL small group discussion, tutors were reminded of student-centered learning focusing on group dynamic management and student's involvement in the discussion session as stipulated in the tutor guide for each PBL case. Students were also reminded by tutors not to lose sight on balancing the social and population issues (the **P** in PBL is for *population perspective*s), the human and social behavioral issues (the **B** in PBL is for *behavioral perspectives*), and the life science or living experiences (the **L** in PBL is for *Life/Living perspectives*) so that their learning would be in a more balanced, integrative and holistic manner (Kwan et al., 2000, 2002; Kwan, 2009b).[12, 15] Immediately following the completion of the discussion on the problem, students were asked to offer a verbal feedback on their learning process over a few minutes for each member and their comments were recorded on an evaluation sheet for further analysis.

The measurement design: Course evaluation

Students' feedback and written evaluations, including self-evaluation and peer evaluation, after the completion of each PBL case were routine and mandatory. They formed the basis for the qualitative assessment of this course in addition to their comments obtained in specific face-to-face interviews with the students.

Questionnaires for the evaluation of this course were given to students before and after the course. Results obtained anonymously from all students in both academic

years were pooled and analyzed.

Results

Contents of our questionnaire could be clustered into three major domains: [a] student's level of satisfaction over this course, [b] student's learning experience; and [c] student's learning attitude.

Table 1 shows that the majority of the students (>95%) expressed their overwhelming satisfaction over the entire course. A similar level of satisfaction was also obtained with respect to the use of PBL as a major pedagogic instructional component in this course. We have used a couple of introductory lectures on the general theories and principles of ethics as well as enticing students to discussion following demonstration with movies. These instructions were introduced stepwise to increase the student's exposure to self-directed group learning leading to PBL. Obviously, the students considered PBL a pedagogic approach being able to achieve effective learning, which apparently is also attributed to the effectiveness in the facilitation of the tutors. Although there was no statistical difference in the overall satisfaction with the above attributes between students in the academic year 2007 and 2008, a notable elevation in students expressing higher level of satisfaction towards the use of PBL for learning ethical issues from 28.2% to 35.0%, and tutor's facilitation from 35.9% to 60% in 2007 and 2008, respectively. This is probably due to the fact that both the students and tutors were better adapted to the concept and the process of PBL.

Since student feedback and evaluations (both self-evaluation and peer-evaluation) following the completion of each PBL problem were a mandatory part of the PBL process in this course, the results of these evaluations are collectively shown in Table 2. Clearly, the results showing almost all attributes being rated above 5 over a 7-point

scale are consistent with student's overwhelming satisfaction on PBL as an instructional pedagogy as indicated in Table 1. The results also offer more insights on students' satisfaction, such as their ability, appreciation and confidence in self-directed learning attributes in PBL. In particular, it can be noted that in PBL tutorials students' willingness in listening to others and accepting difference in the group achieves the highest score in both self-evaluation and peer-evaluation. Furthermore, the students generally appreciate their peer's ability to express and communicate constructive ideas, thus contributing to the positive group dynamics in learning.

Table 3 shows the comparison of students experience on the learning experience before and after taking the course. Before the course was offered, students were asked to comment on their other learning experiences in this university, mainly of non-PBL, didactic lecture nature (pre-test) and the results were compared to the learning experience at the end of this course (post-test).

It is interesting to note the consistent positive trend of change in students' learning experience towards those characteristics of PBL instructions as offered in this course. This includes typically the relevance of learning to personal living situation (via real-life scenarios in PBL), and more frequent use of digital and library facilities for information acquisition (self-directed active leaning in PBL),

A clear shift in the paradigm of students' learning experience is of particular striking in three aspects. First, more students appreciate being respected for allowing them the opportunity to raise and express their own ideas (from 23.8% to 69.6%), whereas more than 1/3 of the students admitted that in other non-PBL traditional lecture courses, their viewpoints were not quite respected and they did not have the opportunity to express. Second, the students taking this course appreciate the interactive experience with teacher both in discussion and collaborative efforts in exploring and solving problems (collectively 75.7 %, overwhelmingly more than the mere19.8% in the

pre-test). Typically, these students experienced mainly didactic transmission of knowledge from the teachers and were given standard answers to the questions students raised, if any (accounting for 80.1% collectively). Third, 72.2% of the students were highly impressed by the process of PBL in learning ethics and appreciate the experience, whereas 29.6% of students enjoyed learning experience via small group learning previously or in other courses, and 61.7% did not have particular lasting impression of such an experience. This is probably due to the fact that the small group learning experience in the traditional curriculum/courses may remain to be teacher-centered or task-oriented, as in laboratory courses or case studies, in which group learning, not necessarily student-centered, interactive discussion in small group format, may be involved.

Table 4 shows a number of positive conceptual changes of attitude towards learning amongst the students after they have completed the course. While a conservative view about self-directed learning attitude remains similar before and after taking the course (67.9% versus 68.4%), More students have converted their attitude on their self-directed learning environment from “not so good” (18.5% vs 1.3%) to very good (13.6% to 30.4%).

It also becomes evident that, before taking the course, the students were either indifferent about or non-discriminating against the learning instructions (about 60%), still with a slight preference to small group discussion (28.4%) compared to large group lecture (11.1%). This is consistent with the expectation of the passive attitude of the students, not exposed to PBL, in conventional education. Following the completion of the course, 66.7% of students indicate preference for the PBL small group discussion as opposed to that for the conventional large group lecturing (7.7%).

As for the attitude in the attainment of the purpose of learning, the majority of students who finished the course (69.6%) indicate that active inquiry and

problem-exploration represent a top priority. It is interesting to note that even for the students before the exposure to this course, the proper attitude in the attainment of the purpose of learning consider highly of the active inquiry and problem-exploration (46.9%) , which carries a similar weight as willingness to accept differences and criticisms (44.4%). This would be an important take-home message for teachers of extreme conservative nature expecting students to regurgitate his/her contents of teaching and completing the assignments. Unfortunately, such authoritative expectation from teachers' end is not uncommon even in contemporary university teaching.

When students were confronted with the choice in what they would consider the most important element in the process of learning, these students before and after the course offered comparable answers with minor variations. They agree that cultivation of the ability to solve problems is the most important element (38.3% and 35.4%). Similarly, only a handful of students consider knowledge enrichment is the most important element in the process of learning (12.3% and 13.9%), a clear reminiscence of traditional educational influences. As expected, cultivating the skill of self-directed learning represents a major paradigm shift in their attitude after they have experienced this course (26.6% as opposed to 16%).

Discussion

At the onset of discussion, we must first recognize the fact that it may be too ambitious and unrealistic to expect a revolutionary influence on students' learning habits, because of the small scope or magnitude of the experimental PBL course (not all the students have been exposed to PBL approach in learning) and the hybrid nature of PBL (PBL accounts for less than 20% of the medical curriculum) at our university (Shen, 2009;).[14] Nevertheless, like other Asian university (Khoo, 2003) [16] or north American university (Kwan & Tam, 2009; Houlden et al;., 2001), [17,] we did receive positive feedback and appraisal about PBL in students' overall learning perspectives. The paradigm shift, however small in the beginning, is certainly and clearly evident and may be

improved upon persistent training (Khoo, 2003; Kwan et al., 2011). [16,] Our results indeed pointed to several positive characteristics on students' qualitative feedback as written comments at the end of each PBL tutorial. They are discussed below.

First, we observed that novice faculty (recruited in 2008) who volunteered to be tutors were much positively accepted by students. Students commented that these teachers worked with compassion and enthusiasm,…...they are willing to be more proactive in learning together with students. Second, both self-evaluation and peer-evaluation showed the students were more confident in listening and accepting diverse voices and different opinions, but they still lacked the ability to express and communicate ideas, reflecting the traditional Asian students' learning style. Given sufficient time and practice in PBL sessions, such "communicative" skills can be improved and overcome with proper tutor guidance and peer facilitation (Khoo, 2003).[16] Third, about the discussions on bioethical issues, students seemed to appreciate more in living issues closely associated with themselves, rather than issues in relation to the nature, biosphere, animal, or even human society. This suggests to us that our students in Taiwan, under the traditional education system, are more interested in issues centering on themselves (self-centered), rather than developing a sense of population/community. PBL sessions helped identify such deficiency and broaden students' horizon of thinking and vision.

However, student also very candidly expressed some degrees of bewilderment, because they often realize after some case discussions that the bioethical issues embodied within each case do not always associated with a conclusive, concrete or standard answer or answers, thus posing dilemma in the seemingly simple objective of "solving problem". Therefore, the students realized that the aim of PBL is not merely to solve problems as it has often been mistakenly perceived by many (Lee & Kwan, 1997; Achike & Kwan, 1999) [11, 18] In cultural/behavioral related issues, including

ethics, the learning can be taken place in the form of experiencing scenarios, not necessarily in classroom lectures (Kwan, 2001). [19]

The problem-exploration is actually a component in PBL equally, if not more important than problem-solving (Kwan, 2009b).[12] Holding an "easy relativism" and searching for standard answers, again, is a natural trait of reductionism in traditional education. This also suggests that potential problems in the effectiveness of teacher-centered “teaching” of bioethics, may be circumvented by the implementation of student-centered PBL as in this course. Such consideration has previously been suggested as well (Schmidt,1993; Parker, 1995; Hsin, 2009).[20, 21, 13] We have noted students’ frustrations which one student regarded as “significant stress”, the stress to express and interact, the stress to self- and peer-evaluate and the stress to search for information independently. Such stress in PBL is apparently an intrinsic part of the PBL process not unique to students in Taiwan, but also to students in other countries, including those at McMaster University (Kwan et al., 2002; 2005)[22, 23] where PBL originated (Barrows, 1986; Lee & Kwan, 1997)[9, 11] and should be regarded as strength in learning rather than a weakness.

In conclusion, we were quite encouraged to have seen the comments made by the students: [1]" I learned a lot from the PBL sessions and I really would like to see more of such PBL cases be offered in the General Education course. " [2] "PBL should be widely adopted in many other course or disciplines, because only in PBL approach the students were given the opportunities to interact with each other, through which learning indeed occurs". Such a positive comment has been expressed by many students, some of them even consider such learning approach more superior and effective than the didactic lecture approach in large class room, teaching hall or lecture theater [3] "I would like to see better multiplicity and open-ended issues in the PBL cases". To further investigate the effectiveness of PBL in the instructional process of

learning of bioethics, we are currently carrying a study on the effectiveness in the training of teachers for bioethics courses as a follow-up of this work.

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Table 1

Student satisfaction over PBL as a learning instruction

Attributes	2007 (n=39)	2008 (n=40)	P value
The entire course as a whole			0.820
Very satisfied	9 (23.1%)	8 (20.0%)	
Satisfied	29 (74.4%)	30 (75.0%)	
Not so satisfied	1 (2.6%)	2 (5.0%)	
Unsatisfied	0 (0.0%)	0 (0.0%)	
The PBL approach in learning ethics			0.434
Very satisfied	11 (28.2%)	14 (35.0%)	
Satisfied	27 (69.2%)	23 (57.5%)	
Not so satisfied	1 (2.6%)	3 (7.5%)	
Unsatisfied	0 (0.0%)	0 (0.0%)	
Positive effect of PBL on my learning			0.945
Very satisfied	11 (28.2%)	10 (25.0%)	
Satisfied	25 (64.1%)	27 (67.5%)	
Not so satisfied	3 (7.7%)	3 (7.5%)	
Unsatisfied	0 (0.0%)	0 (0.0%)	
The helpfulness of my tutor			0.055
Very satisfied	14 (35.9%)	24 (60.0%)	
Satisfied	25 (64.1%)	16 (40.0%)	
Not so satisfied	0 (0.0%)	0 (0.0%)	
Unsatisfied	0 (0.0%)	0 (0.0%)	

Table 2

Student self- and peer-evaluation of performance in PBL tutorials

	2007 (N=46)		2008 (N=40)	
	SE	PE	SE	PE
Devotion to preparative work and information acquisition	5.09	5.15	5.17	5.28
Skill development in rational thinking and critical analysis	5.35	5.28	5.33	5.36
Comprehension of relevant issues in the trigger problems	5.30	5.40	5.45	5.51
Willing to listen to others and accept difference in the group	5.89	5.46	6.02	5.73
Contribution to maintaining group dynamics in learning via interactive discussions	5.13	5.22	5.33	5.52
Ability to express and communicate constructive ideas	4.97	5.34	5.20	5.53

Evaluation was performed independently at the completion of each of the 3 PBL problems over a 7-point Likert scale following the completion of each of all PBL problems for the students groups in 2007 and 2008.

Since there were no differences among these problems in all attributes, the scores from all 3 problems were grouped together. The average score of self-evaluation (SE) and peer-evaluation (PE)

Table 3

Student perspectives on learning experience before and after taking this course (2007 and 2008)

Attributes	Selections	Pre-test (n=81)	Post-test (n=79)
Course content is in line with your real-life living experience	(1).entirely	7 (8.9%)	7 (8.9%)
	(2).partially	57 (72.2%)	64 (81.0%)
	(3).somewhat	11 (13.9%)	8 (10.1%)
	(4).not at all	4 (5.1%)	0 (0.0%)
	Not answered	2	
Raising questions and expressing ideas	(1).feel respected	19 (23.8%)	55 (69.6%)
	(2).feel comfortable	30 (37.5%)	24 (30.4%)
	(3).feel uncomfortable	27 (33.8%)	0 (0.0%)
	(4).feel disrespected	4 (5.0%)	0 (0.0%)
	Not answered	1	0
Experience on searching for information via internet or library	(1).never	0 (0.0%)	0 (0.0%)
	(2).few (less than 5 times per semester)	11 (13.8%)	2 (2.5%)
	(3).sporadically (5-10 times per semester)	33 (41.3%)	32 (40.5%)
	(4).frequently (>10 times per semester)	36 (45.0%)	45 (57.0%)
	Not answered	1	
Format of interactions with teachers/ tutors	(1).listen to lecture	41 (50.5%)	7 (9.0%)
	(2).question and answer	24 (29.6%)	12 (15.4%)
	(3).Interactive discussion	12 (14.8%)	25 (32.1%)
	(4).seeking solutions together	4 (5.%)	34 (43.6%)
	Not answered		1
Prior experience in group learning via interactive small group discussion	(1).never	1 (1.2%)	0 (0%)
	(2).a little, but not effective	6 (7.4%)	4 (5.1%)
	(3).some, but not impressive	50 (61.7%)	18 (22.8%)
	(4).love it and it is impressive	24 (29.6%)	57 (72.2%)

Table 4

Change in student learning attitude after completion of this course

(2007and 2008)

Attributes	Selections	Pre-test (n=81)	Post-test (n=79)
My self-directed learning skills	(1).Very good	11 (13.6%)	24 (30.4%)
	(2).acceptable	55 (67.9%)	54 (68.4%)
	(3).not good	15 (18.5%)	1 (1.3%)
	(4).poor	0 (0.0%)	0 (0.0%)
My preferred mode of learning	(1).small group discussion	23 (28.4%)	52 (66.7%)
	(2).large group lecture	9 (11.1%)	6 (7.7%)
	(3).like both of above	24 (29.6%)	11 (14.1%)
	(4).dislike any of above	0 (0.0%)	0 (0.0%)
	(5) no preference	25 (30.9%)	10 (13.8)
The most desirable and essential for me to achieve the purpose of learning	(1).able to re-illiterate what is learned in the lectures	0 (0.0%)	5 (6.3%)
	(2).complete all assignments	7 (8.6%)	2 (2.5%)
	(3).accept differences and criticisms	36 (44.4%)	17 (21.5%)
	(4).active inquiry and problem-exploration	38 (46.9%)	55 (69.6%)
What I consider the most important element in the process of learning	(1).knowledge enrichment	10 (12.3%)	11 (13.9%)
	(2) cultivate an active attitude	13 (16.0%)	21 (26.6%)
	(3).analytical thinking skills	27 (33.3%)	19 (24.1%)
	(4). problem-solving skills	31 (38.3%)	28 (35.4%)

中文摘要

本研究目的在探討醫學大學的學生應用問題導向式學習(PBL)於生命與倫理學習後之看法。以"生命與倫理"為課程名稱，結合生命科學與人類價值兩方面之學習，設計出一個屬於通識選修的倫理先修課程。於大學教育之早期階段提供經由 PBL 的倫理學習，其目的不只是要達到通識教育中知識、技能與態度平衡的學習，同時也希望能發展出自主與終身學習倫理的能力，而這正是當前大家對健康專業者的期待。

經過一系列的準備、試行後正式實施課程。以 2007、2008 年選修此課程的學生為對象，在課程前後予以問卷調查，收集其學習滿意度、學習經驗與學習態度等三方面資料。整體上，學生皆表達了對學習的滿意，而前後兩年滿意度也略有提昇。學生學習經驗中感受最深的是與教師間之互動、以及提出與表達看法時所受到之尊重。除此之外，課程完成後學生在學習態度的諸多項目上也有許多正向之改變。課後自評與同組互評中顯現學生對於小組學習中傾聽與接受多元意見之表現較有自信，然對於表達與溝通想法之能力仍自覺不足，此正反映出東方學生學習上之特質。種種資料讓我們確定，應增加 PBL 在醫學大學的學生早期之學習中。