



Comparative effectiveness of the A.L.O.H.A. Project didactic training versus the integrated mixture of the didactic and experiential training programs on knowledge, confidence, and empathy of pharmacy students

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Background

The **A.L.O.H.A. (A Life of Health and Awareness) Project** is a registered independent student organization at the Daniel K. Inouye College of Pharmacy with the mission of spreading health awareness throughout the state of Hawai'i by providing free, student-led community health screenings and consultations.

Effective pharmaceutical care includes components of knowledge, skills, confidence, and empathy, which are utilized throughout the wellness screening and consultation process.

The Project puts its members through extensive didactic-training that focuses primarily on proper screening techniques, knowledge of common disease states and development of effective communication.

Upon completion of didactic-training, members are required to attend two community health screening events where they can further enhance their knowledge and skills and provide a service to the community.

No studies have investigated the effectiveness of didactic training versus the integrated mixture of didactic and experiential training as an organizational training method, specifically examining the knowledge, confidence, and empathy of its members.

Our mission fits into the *CAPE Educational Outcomes* promulgated by the *AACP* in providing patient-centered care (Caregiver) and promoting health improvement, wellness, and disease prevention for individuals and communities (Promoter).

The Project has received IRB approval from the University of Hawai'i Human Studies Program: CHS#22470

Objectives

To compare the effectiveness of the ALOHA project didactic-training versus combination experiential training with patient interaction on students' knowledge, confidence, and empathy.

Demographics

Table 1. Demographic Characteristics of Pharmacy Students Participating in the A.L.O.H.A. Project Intervention

Characteristics	Students, N = 38
Gender, No (%)	
Male	8 (21%)
Female	30 (78%)
Age, years	
Mean (SD)	25.08 (3.22)
Range (min-max)	20-40
Ethnicity, No (%)	
Asian	33 (87%)
Caucasian	4 (11%)
Hispanic	1 (2%)
Professional Year in Pharmacy School, No (%)	
P1	7 (18%)
P2	20 (53%)
P3	11 (29%)
Prior Undergraduate Degree, No (%)	
Yes	32 (84%)
No	6 (16%)

Methods

Study Design and Procedure: Prospective pre- and post-tests quasi experimental study. The program included classroom lectures on hypertension, diabetes, and dyslipidemia with hands-on learning and role-playing with case scenarios.

After satisfactory completion of didactic training, exposure to experiential training involved patient-centered care to promote health, wellness, and educational strategies for individuals and communities.

All students are required to complete at least one community health screening event and one campus event per semester.

The study included 38 students from three professional years: P1 (class of 2019), P2 (class of 2018), P3 (class of 2017).

Instruments: One pre- and two post-test instruments [i.e., knowledge questions in three categories: hypertension, diabetes, dyslipidemia (10 each, total 30 items), self-confidence (10 items), empathy (10 items)] were administered to evaluate the impact of the A.L.O.H.A. Project intervention on students' knowledge, self-confidence, and empathy levels.

Data Analysis: All data were coded for mean change scores and statistically analyzed for each objective. Descriptive statistics, paired t-test, and Wilcoxon signed-rank test were used to analyze the data. All statistical tests were set at an alpha significance level of 0.05. Cronbach coefficient alpha reliability was calculated for all instruments.

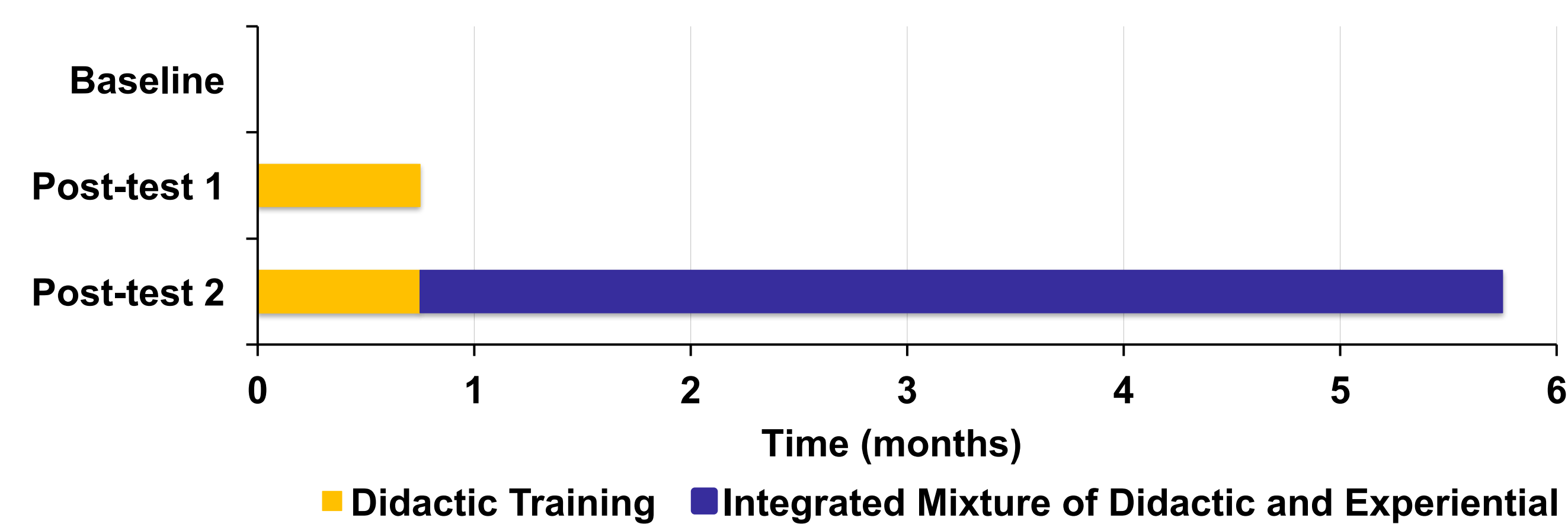


Figure 1. Timeline of Study

- ▶ Baseline questionnaire given prior to didactic training.
- ▶ Post-test 1 given at the end of didactic training (3 weeks) and post-test 2 given after period of experiential (5 months).

Results

Table 2. Knowledge, Confidence, and Empathy Mean Change Scores* Among Three Classes (N=38)

Components		P1		P2		P3	
		Score 1 (SD)	Score 2 (SD)	Score 1 (SD)	Score 2 (SD)	Score 1 (SD)	Score 2 (SD)
Knowledge	Hypertension	1.43 (2.23)	1.14 (2.54)	0.70 (1.08)	1.10 (1.07)	0.09 (0.70)	0.27 (0.65)
	Diabetes	1.14 (1.68)	2.00 (2.08)	0.40 (0.99)	0.80 (0.83)	0.00 (1.26)	0.09 (0.94)
	Dyslipidemia	1.71 (1.50)	2.14 (1.46)	0.45 (0.83)	0.40 (0.82)	0.09 (0.30)	-0.09 (0.30)
	TOTAL	1.43 (0.38)	1.76 (0.54)	0.53 (0.13)	0.77 (0.14)	0.06 (0.48)	0.09 (0.32)
		1.64 (1.16)	2.50 (1.77)	1.65 (1.17)	1.95 (1.38)	1.30 (0.32)	1.59 (2.89)
Confidence	Hypertension	2.09 (1.48)	2.38 (1.68)	1.62 (1.14)	1.83 (1.30)	1.46 (0.54)	1.59 (2.76)
	Diabetes	2.05 (1.45)	2.28 (1.62)	1.98 (1.40)	2.08 (1.47)	1.68 (0.64)	1.78 (2.72)
	Lifestyle	1.71 (1.21)	2.00 (1.41)	1.20 (0.85)	1.55 (1.10)	1.03 (0.19)	1.29 (3.02)
	Motivational Interviewing	1.57 (1.11)	1.43 (1.01)	1.20 (0.85)	1.35 (0.96)	1.05 (0.32)	1.13 (2.89)
	TOTAL	1.81 (1.28)	2.12 (1.50)	1.53 (1.08)	1.75 (1.24)	1.30 (0.40)	1.48 (2.86)
Empathy	TOTAL	3.00 (11.93)	3.00 (8.96)	0.00 (6.39)	3.45 (5.22)	2.18 (3.48)	0.45 (3.78)

*Score 1 (post-test 1 – baseline) and score 2 (post-test 2 – baseline) were calculated as mean change scores
 **Cronbach-alpha reliabilities for baseline, post-test 1, and post-test 2 were 0.92, 0.91, and 0.90 respectively
 All P-values for paired t-tests comparing mean change scores were significant at p<0.05.

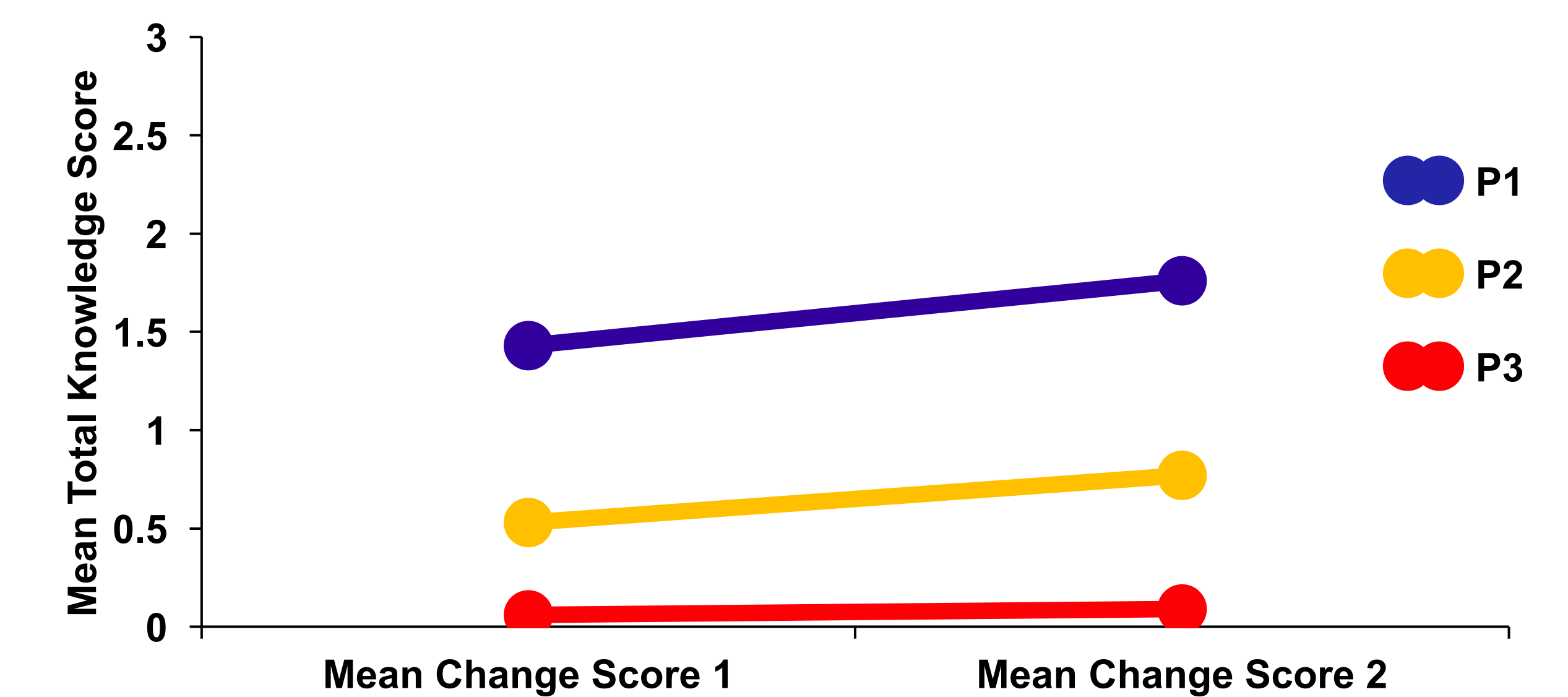


Figure 2. Knowledge Mean Change Scores for Each Class (N=38)

- ▶ The knowledge mean change score for the P2 class significantly improved after the integrated mixture of didactic and experiential training (p<0.02).
- ▶ The overall knowledge mean change score significantly improved after the integrated mixture of didactic and experiential training for all classes (p<0.012).

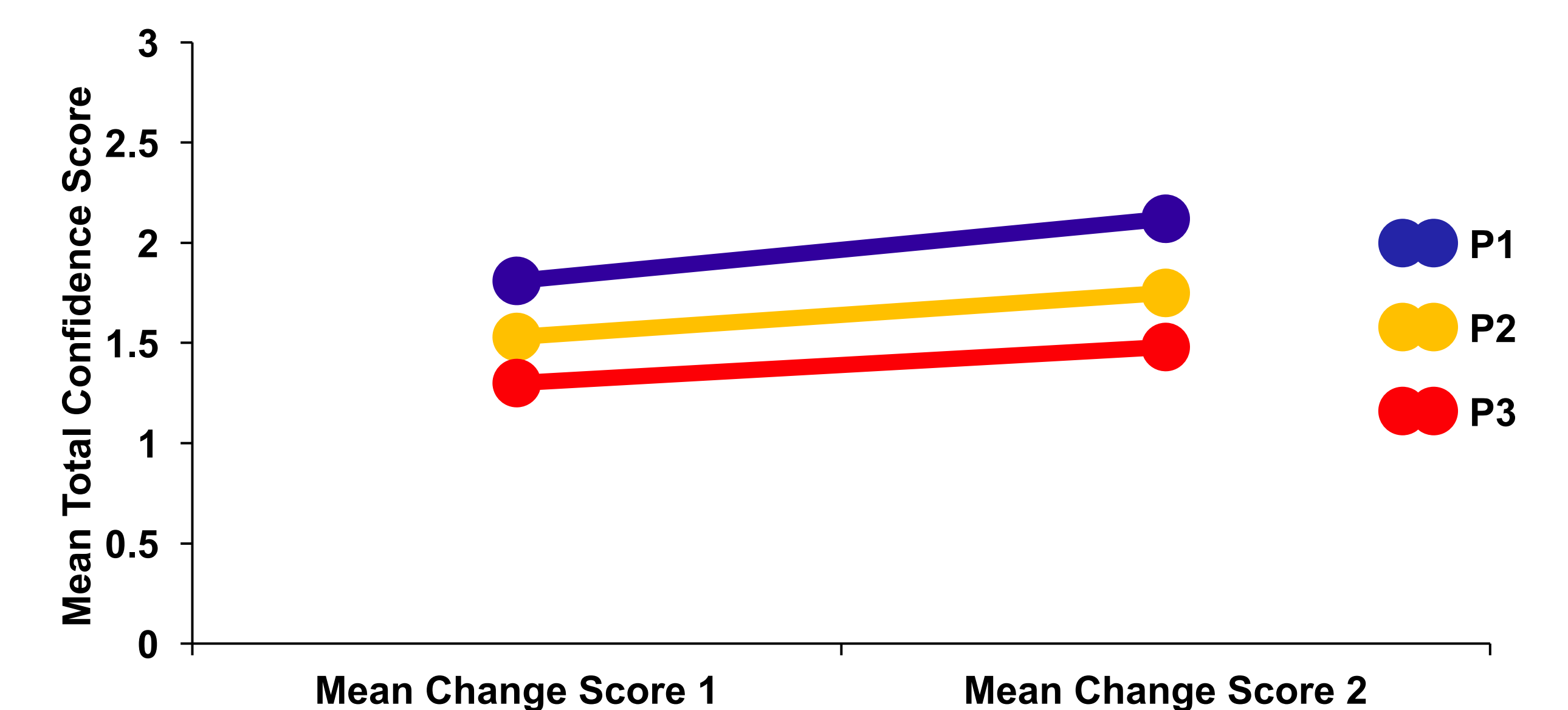


Figure 3. Confidence Mean Change Scores for Each Class (N=38)

- ▶ The confidence mean change score for the P2 class significantly improved after the integrated mixture of didactic and experiential training (p<0.01).
- ▶ The overall confidence mean change score significantly improved after the integrated mixture of didactic and experiential training for all classes (p<0.02).

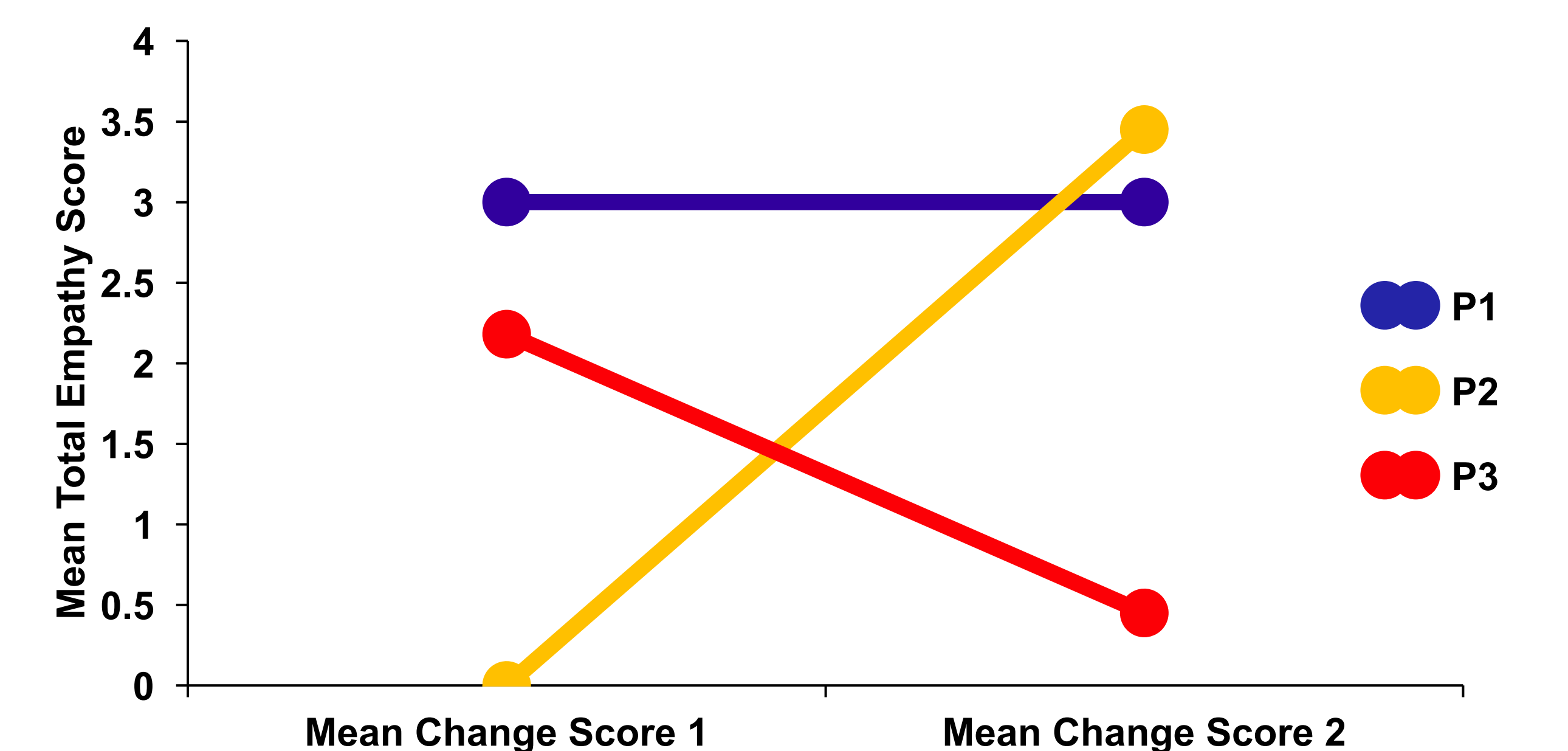


Figure 4. Empathy Mean Change Scores for Each Class (N=38)

- ▶ The empathy mean change score for the P2 class significantly improved after the integrated mixture of didactic and experiential training (p<0.004).

Conclusions

The mixture of the didactic and experiential training programs is an effective training approach in improving second year students' knowledge, confidence, and empathy.

Overall knowledge and confidence mean change scores for all classes showed significant improvement.