Peer-assisted learning augmented by peer counseling to foster academic and personal development in flipped classroom

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Abstract

In recent decades, under the influence of technological advancements, evolving student demographics, and shifting societal demands, the landscape of higher education has undergone significant transformations. Among numerous learning approaches, Flipped Learning (FL) has gained particular prominence due to its ability to enhance students' performance through active engagement and self-directed learning. Another teaching and learning linked to indicators of students' academic achievements is Peer-Assisted Learning (PAL). However, previous research on PAL remains scarce. To fill this gap in the literature, the effects of the integration of Peer Counseling (PC) activity into PAL on both academic and personal development within the flipped classroom setting over time were investigated in the present study. The study participants were counseling students ($n = 91$), including 60 students in the PAL-integrated flipped classroom and 31 in traditional classroom used as the control group. The results revealed that, over a 14-week period, PAL-integrated flipped classroom led to improvement in students' Solution-Focused Thinking (SFT) skills, self-efficacy, and effective counselor characteristics, with medium to large effect sizes. The results also indicated the positive effect of PC on students' counseling performance and achievement scores. These findings offer important implications for creating a collaborative learning environment. The paper concludes with a discussion of challenges typically associated with the implementation of flipped classroom in higher education.

Keywords Flipped learning · Peer-assisted learning · Peer counseling · Solution-focused thinking · Self-efficacy

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1 Introduction

Counselors' ability to apply their counseling skills is intrinsically related to their theoretical knowledge and implementation of this knowledge in their training (Counselman-Carpenter, 2018). As positive therapeutic outcomes largely depend on counselors' skills, the importance of effective teaching these skills can hardly be underestimated. Previous research demonstrated that a counselor's basic counseling skills, along with their theoretical knowledge, have profound effects on the psychological and physical health of clients (Harris & Flood, 2015; Hill & Lent, 2006; Trepal et al., 2007). Yet teaching counseling skills is not simply a matter of imparting the corresponding knowledge and techniques – rather, it involves helping students to develop effective counselor characteristics and self-efficacy (Harris & Flood, 2015). Another challenge encountered by counseling students is the stress that these students experience because of the lack of opportunities to practice skills during their training (Korkut-Owen & Dost, 2020). In this context, it is of pivotal importance to design classrooms that would prioritize counseling students' development of both theoretical knowledge and practical skills, as well as boost their confidence in their ability to provide effective counseling.

In recent years, various applications of technology in classroom have become particularly popular – mostly for their capability to provide flexible access to learning contexts from anywhere at any time. Previous research on learning technologies showed that the Internet is not only a medium of distribution, but also an essential tool to improve the quality of learning experiences and outcomes (e.g., Mason et al., 2022; Means et al., 2013).

One of the blended learning methods that incorporate student-centered learning strategies is Flipped Learning (FL). Through the use of technology and the Internet, FL fosters reflective thinking (Kong, 2014), enables students to learn at their own pace (Bergmann & Sams, 2012), and prepares learners for future experiences. Flipped classroom was also found to maximize meaningful interactions between the lecturer and students, thereby promoting students' extensive participation in classroom activities (Fulton, 2012; O'Flaherty et al., 2015). Well-documented benefits of FL include its higher performance as compared to that of the traditional classroom method (Bredow et al., 2021; Lax et al. 2017), enhancing students' satisfaction and engagement (Awidi & Paynter 2019; Merlin-Knoblich et al., 2019), promoting learners' higher-order thinking (Zain et al., 2022), creative thinking (Tabieh & Hamzeh, 2022), critical thinking skills (Pang, 2022), as well as supporting students' autonomy of actions and enabling them to create organized classroom (Enfield, 2013; Ng, 2018; Zainuddin, & Halili, 2016). Of note, however, while learners' autonomy positively influences the development of thinking skills, supports independent thought processes, and boosts learners' ability to analyze, evaluate, and generate novel ideas (Orakci & Durnali, 2023), in many Eastern education systems that have evolved in collectivistic cultures, the value of learners' autonomy has not been fully embraced (Vansteenkiste et al., 2005).

1.1 FL in counselor education

To date, robust evidence has been accumulated showing the positive effect of FL on student engagement and self-efficacy in counselor education (Mason et al., 2022). For instance, Merlin-Knoblich and Camp (2018) found that, after participating in a flipped learning course in counseling, students showed improved learning outcomes, including critical thinking. In another relevant study, Moran and Milsom (2015) reported that integrating FL into traditional classroom instruction effectively facilitated student-centered learning in counselor education. Furthermore, in a study that compared flipped and traditional classroom designs in a career counseling course, Mason et al. (2022) observed that the flipped classroom design yielded higher ratings of career counseling self-efficacy and more active counseling students' engagement. Similarly, Fulton and Gonzalez (2015) found that the flipped classroom yielded more pronounced improvement in students' confidence and attitude towards career counseling. Effectiveness of flipped classroom design was also documented in other counseling courses such as lifespan development (Merlin-Knoblich et al., 2022), play therapy, and school counseling (Counselman-Carpenter, 2018). Students in the flipped lifespan development classroom found this design enjoyable and beneficial (Merlin-Knoblich & Camp, 2018). Finally, Avcı (2023) found that an ethics class designed with the FL approach effectively enhanced counseling students' multicultural counseling competencies, as well as developed learners' counselor characteristics, basic psychological needs, and cognitive empathy skills.

1.2 Peer assisted learning (PAL) and peer counseling

As noted by Aygün (2004), in collectivistic cultures like Turkey, the quantity, quality, and balance of relationships are crucial; accordingly, social connections are essential to Turkish students' well-being. Turkish culture prioritizes authority and maintains a high power-distance dynamic where senior figures such as teachers and instructors are responsible for learners' guidance and nurturing (Aycan et al., 2000; Hofstede, 2011). This hierarchical structure has a considerable impact on the Turkish education system that promotes teacher-centered approaches. These approaches foster students' passive learning attitudes, as well as hinder learners' critical thinking, socialization, and problem-solving skills (Lonka & Ahola, 1995). This teacher-centered style of education limits students' ability to actively engage with the studied content, thereby impeding students' capacity for its analysis, evaluation, and synthesis (Aygün, 2004; Lea et al., 2003). In this context, integrating PAL strategies into the classrooms could effectively address the shortcomings associated with passive learning attitudes and promote a more interactive and enriching learning experience for students.

Overall, PAL encompasses various cooperative and collaborative educational techniques, including peer teaching, assessment, mentoring, and leadership (Henning et al., 2008). In PAL settings, students can enhance their learning by providing counseling to one another, which can foster their personal development and give them ample room to address any issues (Cormier & Cormier, 1998). Through the involvement of individuals

or groups into mutual support, peer counseling effectively improves students' communication skills, decision-making, relaxation techniques, and assertiveness across different educational levels (Bett, 2013; Morey et al., 1993). Indeed, previous studies showed that PAL can effectively enhance students' academic achievement, critical thinking skills, self-confidence, and motivation, as well as promote their social interaction and collaborative learning (Ala et al., 2021; Ginsburg-Block et al., 2006).

1.3 Present study

Counseling skills, which are a vital prerequisite for an effective session, can be augmented by appropriate education (Heppner & Claiborn, 1989). Such education, as noted by McAuliffe and Eriksen (2011), unfolds in the following six stages: (a) learning about the skill; (b) practicing the skill; (c) discussing the skill; (d) watching and evaluating demonstrations of the skill; (e) trying the skill in class in practice counseling sessions, (f) evaluating their own and others' performances, and (g) discussing the experience with the class. FL and PAL can provide opportunities to accomplish all these steps by enabling students' skills and performance. In this context, the present study examines the effect of the FL classroom model augmented by PAL on students' solution-focused thinking, self-efficacy, effective counselor characteristics, and session performance.

The present study advances previous research on FL classroom effectiveness in higher education in two important ways. First, while previous research on FL and PAL has been rather extensive (e.g., Henning et al., 2008; Koh et al., 2021), none of the previous studies examined the integration of PAL, specifically peer counseling, into the FL classroom setting. Second, although solution-focused thinking skills play a substantial role in higher education, there is currently no research on how to enhance this particular thinking skill. Based on previous research, we hypothesize that, as compared to learners in the traditional classroom:

H1: Participants of the PAL-integrated FL classroom would show a significantly greater improvement in self-efficacy after the intervention.
H2: Participants of the PAL-integrated FL classroom would show a significantly greater improvement in solution-focused thinking skills.
H3: Participants of the PAL-integrated FL classroom would show a significantly greater improvement in effective counselor characteristics.
H4: Participants of the PAL-integrated flipped classroom would show a significantly greater improvement in session performance.

2 Method

2.1 Participants

A priori power analysis was conducted using G*Power version 3.1.9.7 (Faul et al., 2007) to estimate the sample size. Results indicated that the required sample size to achieve 80% power for detecting a medium effect $f = 0.35$ by referring to the

suggestions of previous flipped classroom studies (Strelan et al., 2020) at a significance criterion of $\alpha = .05$, was $N = 82$. Thus, the obtained sample size of $N = 91$ is adequate to test the study hypothesis. The sample was 74.7% female ($n = 68$) and 25.3% male ($n = 23$). 60 (65.9%) of the participants were in the intervention 1(Flipped classroom) and 31 (34.1%) in the intervention 2 (Traditional classroom).

The students in both courses were in third grade in counselor education. The mean age of the participants was 21.31 ± 1.05. There were no statistically significant differences between groups in terms of grade point average (M=3.03, SD=0.31 for intervention 1 and M=3.01 SD=0.32 for intervention 2 (p=.817). Table 1 shows the demographic characteristics of the sample and descriptive statistics of outcome measures. The researcher considered classroom types (Flipped-Traditional) as interventions because both designs use a range of teaching methods to improve student's skills.

2.2 Procedure

Following institutional review board approval (2022/99), students in both counseling skills courses were informed about the study in the first class. An online survey

Table 1 Demographic characteristics of the sample and descriptive statistics of outcome measures

	Pal-Integrated Flipped Classroom (n=60)		Traditional Classroom (n=31)	
Demographics	*M(SD)*		*M(SD)*	
Age	21.35(1.16)		21.25(.81)	
Grade Point Average	3.03(.31)		3.01(.32)	
Gender	n (%)		n (%)	
Female	46(76.7)		22(71)	
Male	14(23.3)		9(29)	
Outcomes	Pre-test *M(SD)*	Post-test *M(SD)*	Pre-test *M(SD)*	Post-test *M(SD)*
Counselor Activity Self-efficacy				
Helping Skills	78.30(13.70)	84.60(11.44)	35.45(3.42)	46.96(3.31)
Session Management	72.55(19.43)	86.73(21.69)	41.83(8.05)	81.70(4.80)
Counseling Challenges	50.50(12.42)	62.25(14.13)	27.54(5.88)	52.45(4.06)
Effective Counselor Characteristics				
Intellectual Competency	20.60(2.71)	31.31(3.97)	20.54(1.78)	23.70(3.34)
Energy	9.76(1.84)	13.60(2.81)	10.12(1.33)	12.00(1.43)
Flexibility	10.45(1.84)	15.33(2.08)	10.06(1.38)	12.35(1.78)
Support	7.96(1.43)	12.36(1.76)	7.80(1.32)	9.64(1.66)
Goodwill	10.98(1.86)	17.00(2.23)	10.32(1.30)	12.80(2.21)
Self-awareness	8.06(1.37)	11.50(1.97)	7.64(1.19)	8.80(1.35)
Solution-Focused Thinking	2.32(.26)	4.29(.47)	2.33(.28)	2.51(.21)
Problem Disengagement	2.30(.41)	4.10(.45)	2.35(.42)	2.54(.31)
Goal Orientation	2.26(.40)	4.42(.58)	2.37(.28)	2.50(.28)
Resource Activation	2.38(.33)	4.33(.67)	2.29(.39)	2.48(.28)

questionnaire, including informed consent, socio-demographic form, Counselor Activity Self-Efficacy Scale (CASES), Solution-Focused Thinking Scale (SFTS), and Effective Counselor Characteristics Scale (ECCS), was administered to the students at the beginning of the semester and the end of the semester. In addition, the Session Evaluation Questionnaire (SEQ) was applied after the first and last counseling session to assess students' peer-counseling performance of the participants in the flipped classroom. The lecturer was a full-time faculty member with experience in teaching counseling skills and FL. The researcher also ensured that students in both classrooms received the same content.

2.3 Course designs

2.3.1 FL classroom (Intervention 1)

Both counseling skills courses were completed during a two-hour course program per week; the program lasted 14 weeks and was conducted among students of the 6th semester. The procedural steps of both the PAL-Integrated Flipped classroom and the traditional classroom are presented in Figure 1. The students in the FL classroom were first informed about the design of the course and their responsibilities throughout the semester. Specifically, the students were asked to learn by watching video lectures and reading course materials (counseling skills textbook or sample counseling skills highlighted in transcribed therapy sessions). The study participants were also informed about the peer counseling process. The lecturer informed the students about confidentiality and boundaries regarding helping others during the peer counseling sessions. In the first class, the students were randomly paired for peer counseling sessions after class. The purpose of this random pairing was to prevent friendship biases, peer pressure, and the tendency to give the same mark in the session evaluation questionnaire.

The course materials were carefully crafted to provide students with comprehensive and well-structured content, and the lecturer provided adequate guidance and support to assist students in their independent learning time. To this end, an online Google classroom was created and the study participants in the flipped classroom were granted access to this classroom after the start of the semester. The study participants also received access to video lectures related to counseling skills (e.g., asking open-ended questions, focusing, attending, reflecting, paraphrasing, summarizing, beneficial counselor characteristics and behaviors). Duration of these video lectures ranged from 15 to 25 minutes. The corresponding PowerPoint presentations were made available to the students by the lecturer on the online platform one week prior to the start of each new topic. During this independent learning time, the students were encouraged to take notes and write sample sentences based on what had been included in the video lectures. In addition, the students were tasked with writing their own reflections and formulating pertinent questions. As a supplement to video lectures, an exercise book was provided for students to practice on their own before face-to-face class time.
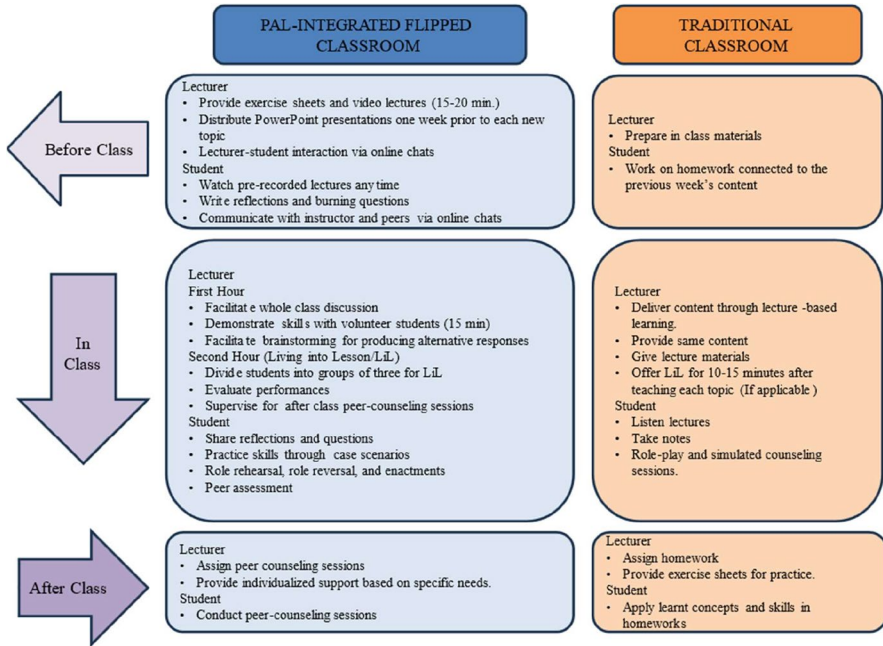
Fig. 1 The procedural steps of classrooms

The two-hour face-to-face class time was divided into two parts. In the first hour, the lecturer started the lesson by asking the students to share with the whole class their reflections and pertinent questions on the topics covered in the video lectures. As articulated by Sommers-Flanagan and Heck (2012), students can benefit from observing counseling skills in action; accordingly, to demonstrate counseling skills related to the topic of the week, the lecturer picked a volunteer student and played a counselor role with him/her for ca. 15 minutes. At the end of the demonstration, the students, in groups of three to five and using PAL, were asked to brainstorm their ideas and produce alternatives to the counselor's statements. In this process, the focus shifted to PAL and solution-focused thinking exercises, where students worked together in small groups to reinforce their understanding and to collaboratively find solutions.

In the second hour of class time, the students were divided to groups of three. This class time called Living into Lesson (LiL), during which the study participants practiced the learned skill with each other. LiL included case scenarios, role assumptions, role rehearsal, role reversal, and enactments. All students in the group assumed the roles of counselor, client, and observer. At the end of the LiL, the students also evaluated their own and group members' performances. The instructor supervised the groups that experienced difficulties also trained students for their roles, supervised their activities, and evaluated performances.

To further enhance the PAL process, PC integration was incorporated. At the end of the lesson, students were assigned to conduct a 15-20-min counseling session

with their peer client. Peer counselors provided individualized support to their clients based on their specific needs, such as individual learning needs, self-regulation strategies, motivation, and self-confidence. The students were also encouraged to share the problems they had been experiencing in real life with the peer counselor. Ultimately, students actively participated in peer-assisted learning activities, seeking support from both their classmates and peer counselors to practice their counseling skills using solution-focused thinking through in- and post-classroom activities.

2.3.2 Traditional classroom (Intervention 2)

The FL classroom group and the traditional instruction group received equivalent instruction. To facilitate a direct comparison between the two groups, the students in the traditional classroom were provided with the same content and skills instruction, but delivered in two different ways. The method of teaching counseling skills that is commonly used in traditional classrooms is lecture-based learning. In this traditional classroom setting, the instructor lectured the same content as in the FL classroom, including asking open-ended questions, focusing, attending, reflecting, paraphrasing, summarizing, and beneficial counselor characteristics every week. However, students were often passive listeners, leading to lower engagement during class time. Moreover, there was minimal opportunity for students to interact with the material, the lecturer, or their peers during the learning process. To practice their skills, the students in the traditional classroom received the same exercise book that was given to the students in the FL classroom. Despite receiving the same content, students were taught at a uniform pace, which potentially left some students behind while others felt unchallenged.

After teaching the topic of the week, the lecturer also provided LiL (same as in the FL classroom) of 10 to 15 minutes for role-playing and simulated counseling sessions, during which the students were allowed to practice their counseling skills in the controlled environment. However, unlike the PAL-integrated FL classroom, the traditional classroom did not include extensive time for peer activities or for the evaluation of content and work on group assignments. The lecturer was the central figure in the classroom, directing all activities and role plays. This traditional approach might have reduced students' autonomy (Enfield, 2013; Ng, 2018; Zainuddin, & Halili, 2016), solution-focused thinking skills (Pang, 2022; Tabieh & Hamzeh, 2022) and self-regulation skills (Bergmann & Sams, 2012), as it limited opportunities for active participation during role plays.

Compared to Pal-integrated Flipped classroom, role-playing often lacked the authenticity of real counseling situations, making it difficult for students to fully immerse themselves in the experience (Ala et al., 2021; Korkut-Owen & Dost, 2020; Trepal et al., 2007). Although role plays help in understanding counseling skills, they do not provide students with the opportunity to practice actual counseling techniques or develop a therapeutic presence like peer counseling activities in Pal-integrated flipped classroom (Kiye et al., 2020). Due to classroom limitations such as time constraints, limited opportunities for practice, difficulty in assessing skills, or resistance from students uncomfortable with role-playing about newly learned

skills, the lecturer used video-based training related to the topic. While video-based simulations were provided to demonstrate counseling skills, this method has several drawbacks when applied to a counseling skills course. The lack of real-time interaction, reduced opportunities for practical application, decreased engagement, limited peer interaction, and a fixed learning pace can hinder the development of essential counseling competencies (Hill & Lent, 2006; McAuliffe & Eriksen, 2011).

2.4 Measures

The socio-demographic form included gender, age, and grade point average (GPA) of the participants. Counselor Activity Self-Efficacy Scale, Solution-Focused Thinking Scale, Effective Counselor Characteristics Scale, and Session Evaluation Questionnaire (SEQ) were applied to determine whether there is a difference between groups.

2.4.1 Counselor activity self-efficacy scale (CASES)

A ten-point Likert-type CASES developed by Lent, Hill, and Hoffman (2003) was used to determine counseling self-efficacy. Individuals are asked to evaluate themselves for each item within the range from (0) "I don't trust at all" to (9) "I totally trust". High scores indicate a high level of counseling self-efficacy. The internal consistency reliability of the whole scale was reported as 0.97 and sub-domains ranged from .79 to .94. In the Turkish adaptation study, Pamukçu and Demir (2013) found the internal consistency reliability as .98 for the overall scale, and .92 for Helping Skills Self-efficacy (HSSE), .95 for session management Self-efficacy (SMSE), and .95 for Counseling Challenges Self-efficacy (CCSE) sub-domains. The HSSE domain consists of 15 items (e.g., open questions, restatements) to evaluate the helping counseling skills. The SMSE domain includes 10 items (e.g., know what to do or say next after your client talks) to assess the management of counseling sessions. The CCSE domain includes 16 items to assess any relationship conflict or client distress. In the current study, the internal consistency reliability of the whole scale, HSSE, CCSE, and SMSE were .98., .97, .97, and .95, respectively.

2.4.2 Solution-focused thinking scale (SFTS)

The SFTS was developed by Grant et al. (2012) and adapted into Turkish by Şanal-Karahan and Hamarta (2015) to measure solution-focused thinking. The 12-item (e.g., I am a good person and live a good life) scale six-point Likert scale has three-factor structures including problem disengagement (PD), goal orientation (GO), and resource activation (RA) with internal consistency reliability estimates of .77, .84, .70, respectively. The overall Cronbach's alpha for the current study, GO, PD, and RA were .83, .82, .84, and .79, respectively.

2.4.3 Effective counselor characteristics scale (ECCS)

The ECCS was developed by İkiz and Totan (2014) to measure the intellectual competency, energy, flexibility, support, goodwill, and self-awareness characteristics of counselors. The 26-item scale five-point Likert scale has six-factor structures including intellectual competency (eight items), energy (four items), flexibility (four items), support(three items), goodwill (four items), and self-awareness (3 items) with internal consistency reliability estimates of .80, .73, .70, .78, .63, .79, and total .90, respectively. The overall Cronbach's alpha for the current study was .82.

2.4.4 Session evaluation questionnaire (SEQ)

To assess the student's peer-counseling performance in the pretest and posttest in the flipped classroom, the SEQ was used. The SEQ was developed by Stiles (1980) and adapted into Turkish by Uluç et al. (2019) to evaluate session effectiveness. The SEQ consists of 22 items (12 items for session evaluation, 10 items post-session mood) in a 7-point bipolar adjective (e.g., valuable-worthless, unpleasant-pleasant, week-powerful). The first 12 items were used for session evaluation by clients in the current study. Higher scores indicate a greater level of session effect. The Cronbach's alpha internal consistency coefficient was between .78 and .98 in the original scale. In the Turkish adaptation study, Cronbach's alpha was between .87 and .92 (Uluç et al., 2019). The Cronbach's alpha internal consistency coefficient was between .79 and .90 in the current study.

2.5 Data analysis

SPSS v26 statistical package program (SPSS for Windows version 26.0; SPSS Inc., Chicago, IL) was used for data analysis. Skewness-kurtosis values were examined to determine the distribution of the data. Skewness (skewness) – kurtosis (kurtosis) values being in the range of -2, +2 indicate that scores were normally distributed (Hair et al., 2010; Byrne, 2013). The results indicated that the skewness ranged from − 1.12 to + .15, and kurtosis ranged from − 1.53 to + 1.61 and were normally distributed. Overall, it can be concluded that the distribution of the data would not be a concern for the current study. Descriptive analysis was conducted for the pre-test and post-test scores of the Counselor Activity Self-Efficacy Scale (i.e., helping skill self-efficacy, session management self-efficacy, counseling challenges self-efficacy) (Fig. 2), Effective Counseling Characteristics Scale (i.e., intellectual competency, energy, flexibility, support, goodwill, and self-awareness) (Fig. 3) and Solution-Focused Thinking Scale (i.e., problem disengagement, goal orientation, resource activation) (Fig. 4). The means and SDs of each outcomes are reported in Table 1.

Analyses of variance (ANOVA) tests were run to look for differences in pre-tests between flipped classrooms and traditional classrooms that might be confounding. Primary analyses were conducted using analyses of covariance (ANCOVA) to investigate the effect of peer-counseling integrated flipped classrooms on self-efficacy,
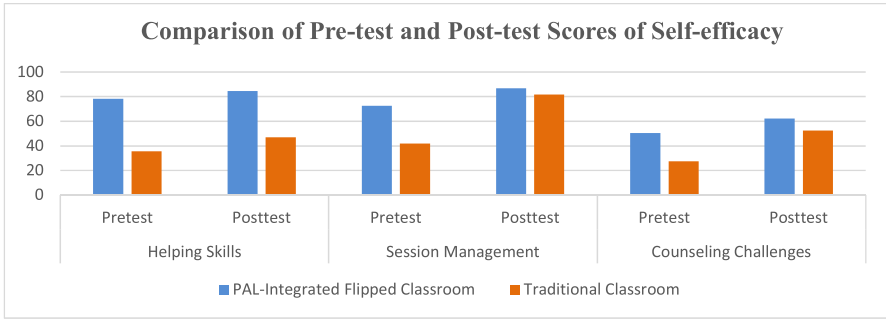
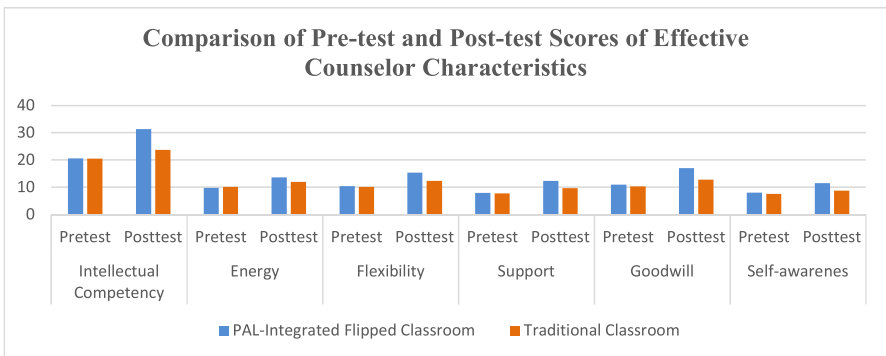**Fig. 2** Comparison of pre-test and post-test scores of self-efficacy

Fig. 3 Comparison of pre-test and post-test scores of effective counselor characteristics
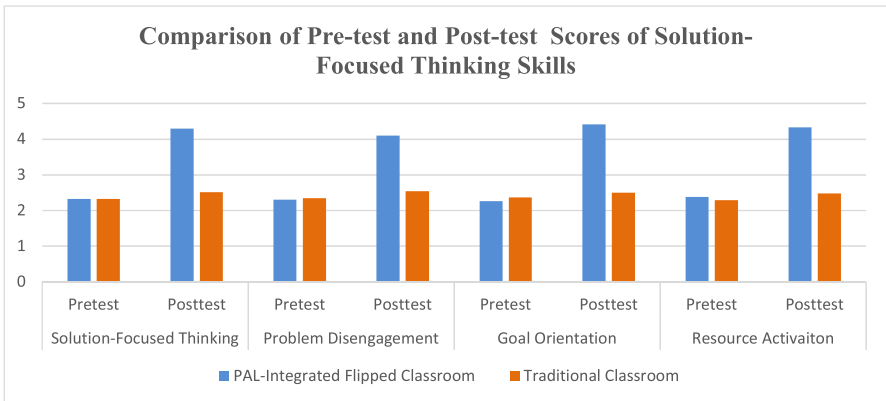

Fig. 4 Comparison of pre-test and post-test scores of solution-focused thinking skills

effective counselor characteristics, and solution-focused thinking skills while controlling for pre-test scores for both groups. ANCOVA serves as a valuable and responsive approach for exploring variations among groups within a randomized control group, particularly when random assignment isn't feasible (Huitema, 2011). Statistical assumptions required by ANCOVA were the covariate that was related to the dependent variable at each level of the independent variable, homogeneity of regression slopes, normally distributed residuals, homoscedasticity, homogeneity of variance, and no outliers (Fox, 2008; Huitema, 2011; Kutner et al., 2005). As all these assumptions were met, it can be concluded that the assumptions would not be a concern for ANCOVA analyses. Thus, ANCOVA was deemed an appropriate approach to test the effectiveness of the peer counseling integrated flipped classroom intervention. The effect size was assessed by employing partial eta squared, applying the standard guidelines: 0.01 to 0.059 = small, 0.06 to 0.139 = medium, and $\geq$ 0.14 = large (Cohen, 1988).

3 Results

3.1 Preliminary analyses

In the preliminary ANOVAs on group differences in pre-test CASES, ECC, and SFT measures indicated several significant differences with medium to large effect sizes. These included counseling challenges self-efficacy, $F(1, 89) = 94.46$, $p < 0.001$, $\eta_p^2 = 0.51$, helping skills self-efficacy, $F(1, 89) = 292.2$, $p < 0.001$, $\eta_p^2 = 0.76$, and session management self-efficacy, $F(1, 89) = 70.82$, $p < 0.001$, $\eta_p^2 = .44$. There were no significant differences in pre-test scores of effective counselor characteristics and solution-focused thinking skills.

3.2 Primary analyses

Results from the ANCOVA for counselor activity self-efficacy measures indicated a significant main effect of intervention 1 for CCSE, $F(1, 88) = 6.79$, $p < 0.05$, $\eta_p^2 = 0.07$, HSSE, $F(1, 88) = 11.31$, $p < 0.05$, $\eta_p^2 = 0.11$, SMSE, $F(1, 88) = 6.23$, $p < 0.05$, $\eta_p^2 = 0.06$ (Table 2). The effect sizes indicated that intervention 1 had a medium effect on counselor activity self-efficacy. Based on the findings obtained, it can be argued that intervention 1, which utilized PAL-integrated FL in their teaching approach, displayed superior levels of helping, counseling challenges, and session management skills compared to the control group, which utilized the traditional teaching approach. These findings suggest that PAL-integrated FL classroom is more effective in imparting counseling skills than traditional teaching methods.

As demonstrated in Table 3, results from effective counselor characteristics measure indicated a significant main effect of intervention 1 for intellectual competency, $F(1, 88) = 14.15$, $p < 0.001$, $\eta_p^2 = 0.48$, energy, $F(1, 88) = 49.98$, $p < 0.05$, $\eta_p^2 = 0.08$, flexibility, $F(1, 88) = 171.89$, $p < 0.001$, $\eta_p^2 = 0.33$, support, $F(1, 88) = 152.19$,

Table 2 ANCOVA results for the adjusted scores of intervention 1 and intervention 2 obtained from counselor activity self-efficacy scale

Variables	Source	Sum of Squares	df	Mean Square	F	p	η2
Helping Skills	Pretest	5163.313	1	5163.313	157.002	.000	
	Groups	372.131	1	372.131	11.315	.001	.114
	Error	2894.055	88	32.887			
	Total	5058.00	91				
Session Management	Pretest	1604.060	1	1604.060	5.258	.024	
	Groups	1901.809	1	1901.809	6.234	.014	.066
	Error	26846.061	88	305.069			
	Total	6867.00	91				
Counseling Challenges	Pretest	.006	1	.006	.000	.995	
	Groups	948.545	1	948.545	6.792	.011	.072
	Error	12288.921	88	139.647			
	Total	330079.00	91				

Table 3 ANCOVA results for the adjusted scores of intervention 1 and intervention 2 obtained from effective counselor characteristics scale

Variables	Source	Sum of Squares	df	Mean Square	F	p	η2
Intellectual Competency	Pretest	21.815	1	21.81	1.541	.218	
	Groups	1179.387	1	1179.387	83.32	.000	.486
	Error	1245.555	88	14.154			
	Total	77538.00	91				
Energy	Pretest	1.511	1	1.511	.251	.617	
	Groups	49.986	1	49.986	8.317	.005	.086
	Error	528.889	88	6.010			
	Total	16092.00	91				
Flexibility	Pretest	6.590	1	6.590	1.687	.197	
	Groups	171.897	1	171.897	43.994	.000	.333
	Error	343.840	88	3.907			
	Total	19189.00	91				
Support	Pretest	.879	1	.879	.291	.591	
	Groups	152.197	1	152.197	50.322	.000	.364
	Error	266.151	88	3.024			
	Total	12327.00	91				
Goodwill	Pretest	4.275	1	4.275	.858	.357	
	Groups	361.622	1	361.622	72.561	.000	.452
	Error	438.564	88	4.984			
	Total	22867.00	91				
Self-awareness	Pretest	.508	1	.508	.157	.693	
	Groups	142.308	1	142.308	.43.890	.000	.333
	Error	285.330	88	3.242			
	Total	10625.00	91				

$p < 0.001$, $\eta_p^2 = 0.36$, goodwill, $F(1, 88) = 361.62$, $p < 0.001$, $\eta_p^2 = 0.45$, self-awareness, $F(1, 88) = 142.30$, $p < 0.001$, $\eta_p^2 = 0.33$. The effect sizes demonstrated that PAL-integrated FL classroom had a large effect on effective counselor characteristics. It can be concluded that the post-test scores of participants in the PAL-integrated FL classroom showed higher intellectual competency, energy, flexibility, support, goodwill, and self-awareness compared to students in the traditional classroom without peer counseling activity.

The primary analyses also demonstrated a significant main effect of the intervention 1 for overall solution-focused thinking skills, $F(1, 88) = 380.05$, $p < 0.001$, $\eta_p^2 = 0.81$, problem disengagement $F(1, 88) = 288.83$, $p < 0.001$, $\eta_p^2 = 0.76$, goal orientation $F(1, 88) = 287.46$, $p < 0.001$, $\eta_p^2 = 0.76$, and resource activation $F(1, 88) = 205.58$, $p < 0.001$, $\eta_p^2 = 0.70$ (Table 4). Based on the acquired findings, it can be posited that the overall solution-focused thinking skills, of the participants in intervention 1, who utilized peer counseling during the training, exhibited a higher proficiency level when compared to the control group. This finding suggests that the utilization of peer counseling in flipped classroom is a more efficacious approach than traditional methods for teaching counseling skills.

Due to the nature of the skills course, the session evaluation questionnaire was used to evaluate student achievements and performances in their peer counseling sessions. The mean of session performance pre-scores ($M = 3.07$, $SD = .32$) was significantly lower than the mean of post-scores ($M = 5.32$, $SD = .39$), ($t(59) = -35.38$, $p < .001$).

Table 4 ANCOVA results for the adjusted scores of intervention 1 and intervention 2 obtained from solution-focused thinking skills scale

Variables	Source	Sum of Squares	df	Mean Square	F	p	η2
Solution-Focused Thinking	Pretest	.060	1	.060	.353	.554	
	Groups	64.537	1	64.537	380.05	.000	.812
	Error	14.943	88	.170			
	Total	1314.812	91				
Problem Disengagement	Pretest	.011	1	.011	.063	.802	
	Groups	49.520	1	49.520	288.836	.000	.766
	Error	15.087	88	.171			
	Total	1229.125	91				
Goal Orientation	Pretest	.032	1	.032	.124	.725	
	Groups	74.248	1	74.248	287.461	.000	.766
	Error	22.729	88	.258			
	Total	1393.56	91				
Resource Activation	Pretest	.018	1	.018	.055	.815	
	Groups	68.465	1	68.465	205.58	.000	.700
	Error	29.307	88	.333			
	Total	1347.250	91				

4 Discussion

The present study aimed to compare the effectiveness of PAL-integrated flipped versus traditional lecture-based courses on solution-focused thinking skills, self-efficacy, effective counselor characteristics, and session performance. The results evaluated at the end of the semester revealed that the difference between these scores in each class was statistically significant in favor of participants in the PAL-integrated FL classroom. Therefore, consistently with several previous studies (Avcı, 2023; Awidi & Paynter, 2019; Brewer & Movahedazarhouligh, 2018; Fulton, 2012; Merlin-Knoblich et al., 2019), the present study confirms the effectiveness of FL classrooms and highlights the benefits of peer-assisted techniques for promoting self-efficacy, thinking skills, and effective counselor characteristics. Yet, unlike previous studies, the present investigation is one of the first attempts to expand the focus of peer-assisted learning research to a conceptual background in an effective teaching environment.

Overall, there is a broad scholarly consensus that students' thinking skills and self-efficacy are positively affected when learning occurs in a dynamic, collaborative, flexible, and interactive environment (Baepler et al., 2014; Thai, De Wever & Valcke, 2017). Similarly, the present results revealed that the PAL-integrated flipped counseling skills course had a positive impact on students' self-efficacy in (1) helping skills; (2) session management; and (3) dealing with challenges; (4) effective counselor characteristics; and (5) solution-focused thinking skills. The results revealed that the enhancement of these skills was facilitated by combining FL classroom with PAL where the students were given an opportunity to analyze, question, and evaluate ideas and concepts presented during the lecture videos (Lea et al., 2003).

The finding that participants of the PAL-integrated FL classroom demonstrated a significantly greater improvement in self-efficacy after the intervention is highly significant (H1). Contrary to Mason et al.(2022), learners in the PAL-integrated FL classroom showed greater improvement in helping skills self-efficacy scores compared to students in traditional classroom. This suggests that the integration of peer-assisted learning (PAL) within a flipped classroom environment has a tangible impact on students' confidence in their counseling abilities. Practically, educators can leverage this approach to enhance students' belief in their capacity to handle counseling challenges, manage sessions effectively, and employ helping skills, preparing them more robustly for future counseling scenarios.

FL classroom fosters reflective thinking (Kong, 2014), autonomy of actions (Ng, 2018), and greater engagement with role plays and open discussions (O'Flaherty et al., 2015). The findings of the current study also demonstrated that the existence of these elements in the PAL-integrated flipped classroom provided the students with a higher level of helping skills such as active listening, empathetic attending, skillful restatements, effective use of open-ended questions, reflection of emotions, timely responsiveness, and adept interpretation. Of note, these skills can also be nurtured through the application of SFT skills (Akgül-Gündoğdu & Selçuk-Tosun, 2021; Juhnke, 1996). Yet the main barrier for counselor educators and counseling

students in traditional classrooms is the lack of possibility to apply these newly learned helping skills (Korkut-Owen & Dost, 2020). As the students in the PAL-integrated FL classroom acquired theoretical knowledge at home, they had more opportunities to practice with their teacher and peers.

While previous research identified a wide range of factors that can foster SFT skills (Goldberg et al., 2016; Grant et al., 2012), the role of peers and teaching methods have been scarcely investigated. In the current study, the observed significant improvement in solution-focused thinking skills among participants of the PAL-integrated FL classroom underscores the effectiveness of this pedagogical approach in fostering critical cognitive abilities essential for counseling practice (H2). This finding implies that the integration of peer-assisted learning within a flipped classroom setting not only enhances traditional counseling skills but also fosters a solution-focused mindset crucial for addressing clients' needs efficiently. Consequently, educators can prioritize this instructional strategy to develop a more agile and solution-oriented approach among future counselors.

The effect sizes indicated that the students in the PAL-integrated flipped classroom had a large effect on solution-focused thinking skills and effective counselor characteristics (i.e., intellectual competency, energy, flexibility, support, goodwill, and self-awareness) than their counterparts in the traditional classroom. Fostering the characteristics of solution-focused thinking and effective counselors not only improves the workings of psychotherapy (Goldberg et al., 2016), but also offers the following practical advantages for counselor educators in the teaching process. First, considering that these attributes are teachable and adaptable, different courses and supervision processes can be tailored to foster students' development. Second, students can actively engage with counselor characteristics, apply them in practice, learn from their peers' experiences, and gain experience in the peer-counseling process (Goldberg et al., 2016; Heinonen & Nissen-Lie, 2020). Finally, the students who met with peer counselors were satisfied with their interaction and benefitted from their counselors' empathy and understanding, as well as developed a problem-solving focus that improved relational difficulties (Morey et al., 1993).

The substantial improvement in effective counselor characteristics among participants of the PAL-integrated FL classroom reaffirms the efficacy of this classroom in shaping students' professional identity and competence (H3). By enhancing attributes such as intellectual competency, energy, flexibility, support, goodwill, and self-awareness, this approach equips aspiring counselors with a holistic skill set necessary for navigating diverse counseling contexts adeptly. From a practical standpoint, this finding underscores the value of integrating peer-assisted learning within counseling education curricula to foster the development of well-rounded and empathetic practitioners.

In the results, peer counselors' session performance was higher in the last session as compared to the first session. The significant enhancement in session performance among participants of the PAL-integrated FL classroom signifies the impact of peer activities and instructional approach on students' practical competence and readiness for professional practice (H4). The result aligns with previous research (Ala et al., 2021; Bett, 2013; Hu et al., 2023) indicating that practices with peers benefit students' performance. Similarly, Kiye et al. (2020) reported that the

effectiveness of peer counseling develops in parallel with students' skills and performance. The current study effectively captures the real-world applicability of the intervention, demonstrating its efficacy in enhancing students' ability to translate theoretical knowledge into effective counseling practice. This result highlights the practical relevance of integrating peer-assisted learning within a flipped classroom framework to enhance students' performance and readiness for the demands of counseling practice.

Based on all these findings, it can be concluded that PAL-integrated flipped classrooms can greatly contribute to counseling students' professional development of counseling students.

4.1 Implications and limitations

Over the last few decades, several creative teaching methods to enhance educators' instructional techniques and students' success in their education have been proposed (Benshoff & Gibbons, 2011; Brown, 2016; Hu et al., 2023). Building on prior research, the present results suggest that PAL-integrated flipped classroom may lead to greater self-efficacy, solution-focused thinking skills, effective counselor characteristics, and session performance than traditional teaching methods in counselor education. The SFT approach was demonstrated to encourage individuals to contemplate on solutions rather than to fixate on issues (Grant et al., 2012). Moreover, the foundational principles of the solution-focused approach that are not rooted in pathology effectively align with the philosophical foundation of professional teaching, which emphasizes concentrating on and fostering students' strengths. In this context, incorporating PAL into the FL might meaningfully equip students with SFT skills. In addition, the development of SFT skills can increase success in both academic and social life not only among counseling students, but also among all students in the education system who major in a broad range of disciplines.

An important practical insight that can be derived from the present results in that PAL-integrated flipped learning is highly instrumental for fostering students' self-efficacy, professional competencies, thinking skills, and strengths. In class time, students can indulge in cooperative and collaborative techniques such as peer discussions, peer assessment, and peer teaching. In addition, students can be paired and encouraged to later involve in peer counseling activity out-of-class, and this could also be helpful for their mental health.

Reflective practice is a crucial element for effective teaching, as it promotes self-awareness, self-evaluation, and continuous learning (McAuliffe & Eriksen, 2011). In the PAL-integrated FL classroom, students have ample opportunity to reflect on their learning experiences as they watch the lecture videos and engage in class activities that allow for self-reflection, peer feedback, and instructor insight.

The strengths of the present study can be summarized as follows. First, the study had an experimental and control group, which allowed to identify the differences in dependent variables (i.e., self-efficacy, solution-focused thinking skills, effective counselor characteristics) attributable to the PAL-integrated flipped classroom intervention. Without a control group, it would have been difficult to reliably attribute

the changes in the dependent variables to the impact of the tested intervention. Second, I conducted tests to evaluate not only the individual impacts of flipped learning and peer learning, both of which are already recognized for their benefits (Henning et al., 2008; Koh et al., 2021), but also the cumulative effects of integrating these two approaches on the development of self-efficacy, solution-focused thinking skills, effective counselor characteristics, and students' performance over time. Finally, I included in the study design multiple indicators of students' academic and interpersonal accomplishments and examined the concurrent impact of PAL-integrated FL classroom on those indicators, which has rarely been examined in the relevant literature.

Despite the aforementioned strengths, this study has several limitations, all of which can be addressed future research. First, since the study had a quasi-experimental research design, a major limitation was the lack of randomization to class groups, which generates concerns about the comparability of the groups at baseline. However, statistical tests (pre-test measures and ANCOVA) addressed this limitation in the analyses. Second, the sample was relatively small and included only counseling students. This compromises generalizability of findings to other student cohorts.

Future research could explore longitudinal effects to assess the sustained benefits of PAL-integrated FL over extended study periods. Additionally, investigating variations in PAL implementation across diverse educational settings and student populations could provide valuable insights into its scalability and effectiveness. Moreover, integrating advanced technological tools and innovative pedagogical strategies could further enhance PAL's interactive and experiential dimensions, enriching both student learning experiences and educational outcomes.

In addition to the limitations related to the present research design, integrating PAL in the FL flipped classroom might be associated with several practical difficulties. There might be challenges associated with the need for adequate technology infrastructure, the risk of increased workload for both students and instructors, the need for instructors to adapt their teaching styles to the new format, and students' inclination towards participating in group activities. This suggests that implementing PAL-integrated flipped classroom and increasing student satisfaction would require substantial and dedicated institutional support (O'Flaherty et al., 2015; Wanner & Palmer, 2015).

In conclusion, this study highlights the transformative impact of integrating Peer-Assisted Learning (PAL) into the Flipped Learning (FL) classroom environment within higher education. Through a rigorous investigation, the current study demonstrated that this integration not only significantly enhances students' self-efficacy, effective counselor characteristics, and solution-focused thinking skills but also fosters a more collaborative and supportive learning environment. By engaging students in active participation, peer interaction, and self-directed learning, PAL within the FL framework equips counseling students with practical skills and confidence essential for their academic and professional growth.

This having been said, the current study contributes to the evolving discourse on effective educational practices by demonstrating the potential of PAL-integrated FL to enhance counseling education. The findings underscore the potential of PAL to

address existing challenges in traditional teaching methods, such as passive learning and limited student engagement. By leveraging PAL's interactive approach, educators can better tailor learning experiences to individual student needs, promoting a deeper understanding of counseling principles and enhancing overall learning outcomes.

Data availability The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval The ethics approval was obtained from the local Institutional Review Board (2022/99).

Competing interests The author(s) report there are no competing interests to declare.

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