



Research Article

Interdisciplinary collaboration models between ELT teachers and social workers

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ABSTRACT

This study explored the models of interdisciplinary work that are used by teachers of English Language Teaching (ELT) and social workers and their relationships to students' writing achievement, critical thinking, and engagement. A convergent parallel mixed-methods design was used. The quantitative approach was conducted with 60 secondary school students in a one-group pretest–posttest design. Repeated-measures MANOVA and paired-samples t-tests revealed statistically significant improvements in writing performance, $F(1, 59) = 52.61, p < .001$, partial $\eta^2 = .47$, and critical thinking, $F(1, 59) = 48.37, p < .001$, $\eta^2 = .45$, while student engagement also improved significantly, $t(59) = 11.42, p < .001, d = 1.47$. In the qualitative strand, thematic analysis of interviews and focus group discussions with twelve ELT teachers and social workers showed that there were three models of collaboration, namely 'consultative', 'coordinative', and 'integrated'. The integrated model was associated with the most consistently positive outcomes across writing performance, critical thinking, and engagement, based on convergence between the two strands rather than a formal statistical comparison of schools or models. Evidence of both strands suggests that addressing psychosocial barriers in a structured interdisciplinary fashion is meaningfully related to cognitive and affective learning. The study identifies institutional policy, role clarity and professional development as key elements in maintaining productive collaboration. Longitudinal and experimental designs should be used in future studies to make more powerful causal inferences.

1. Introduction

Interdisciplinary collaboration has become a key strategy in meeting learners' needs in modern classrooms because learning is multi-dimensional. As the diversity of student populations in English Language Teaching (ELT) contexts has increased, students who are victims of displacement, poverty, and trauma have heightened calls for academic, and not only language-based, support systems. This means the relationship between ELT teachers and social workers is a potential answer to these demands.

Interdisciplinary collaboration is described as a systematic process in which practitioners from various professional disciplines share knowledge, responsibilities, and decision-making for a common purpose (Bronstein, 2003). In schools and school communities, this partnership can be used to help teachers and social workers not only support cognitive and linguistic learning but also to support social and emotional learning issues that can hinder effective

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learning. It is consistently found that when children experience trauma, poverty, or forced displacement, they struggle to acquire language and require a coordinated academic and psychosocial approach (Dryfoos, 2005; Franklin et al., 2012).

Research across a variety of national contexts suggests that when educators and social workers work together, students are more engaged, perform better academically, and learn through inclusion. For example, through meta-analysis research, Franklin et al. (2012) show that school social work services that are embedded within instructional practices positively impact behavioural and emotional issues that directly affect learning outcomes. Integrated working has also been linked to working together better as practitioners (Friend & Cook, 2017).

Interdisciplinary methodologies are also linked with social justice and inclusive education conceptual frameworks that focus on the importance of confronting the structural inequalities in education systems. Social workers provide knowledge on case management, family engagement and psychosocial support, while ELT teachers have proficiency in language pedagogy and instructional design. These two roles can be complementary, enabling a fuller understanding of the needs of learners and equitable access to educational opportunity (Dominelli, 2018).

The importance of interdisciplinary collaboration is especially critical in the context of Ethiopia, where many students suffer from internal displacement, poverty, and limited access to quality education (Ministry of Education [MoE], 2020; World Bank, 2020). Despite the absence of systematic institutional models of collaboration between ELT teachers and social workers in Ethiopian secondary schools, there are some informal practices, and they clearly indicate that structured models of interdisciplinary collaboration can enhance not only language learning outcomes but also students' well-being.

International evidence has been building that it is important to work collaboratively in education, but there are some gaps in the existing literature. First, the current research is largely conducted in high-income, Western countries, and very little empirical research has been conducted to date in both sub-Saharan African and Ethiopian educational contexts with respect to ELT–social work collaboration. Second, there has been no systematic classification and comparison of various models of ELT–social work collaboration to measure student outcomes to date, in a mixed-methods design. Third, there is a lack of theorisation of how psychosocial support is a mediating factor in cognitive outcomes in ELT settings. To address these gaps, this study empirically explored collaboration models between the ELT teachers and social workers in Ethiopian secondary schools and their relationships with the academic and psychosocial outcomes of students.

2. Materials and Methods

2.1. Research Design

The design followed a convergent parallel mixed methods approach (Creswell & Plano Clark, 2018) where quantitative and qualitative data were collected at the same time, analysed individually and then combined during interpretation. This design was chosen to create a comprehensive picture of interdisciplinary collaboration, as it incorporates statistical measurement of student outcomes with in-depth contextual understanding of collaboration processes.

2.2. Participants and Sampling

This study was carried out in selected secondary schools in the Amhara region, Ethiopia. In the quantitative phase, 60 students participated in a one-group pre-test-posttest study (purposive sample). This sample was selected from classrooms where ELT teachers and school counsellors were involved. Twelve participants: six teachers and six school counsellors, were chosen purposively for the qualitative phase because of their direct involvement in the interdisciplinary practice.

Purposive sampling operated at both the school and participant levels. Schools were eligible if ELT teachers and school counsellors reported at least one term of joint practice, so that participants could speak to lived collaboration

experience rather than hypothetical arrangements. Within eligible schools, teachers and counsellors were selected for their direct, ongoing involvement in interdisciplinary support activities, identified through consultation with school leadership. Recruitment continued until no substantially new codes emerged across the final two interviews, indicating that thematic saturation had been reached with the twelve qualitative participants. During coding, each participant's account was cross-referenced against the pre-established operational definitions of consultative, coordinative, and integrated collaboration (see Operational Definitions of Collaboration Models, below); two coders independently classified transcripts into the three categories, with disagreements resolved through discussion (initial inter-coder agreement: Cohen's $\kappa = .81$).

2.3. Instruments

Writing Performance Test

The writing assessment was carried out by a rubric-based test based on the existing EFL writing assessment frameworks. The rubric consisted of five analytic dimensions: (1) Task achievement, (2) Coherence and cohesion, (3) Lexical resource, (4) Grammatical range and accuracy, and (5) Mechanics. The five dimensions were rated on a five-point scale, and a total maximum score of 25 could be obtained. Each script was independently scored by two trained raters, with satisfactory inter-rater reliability ($r = .84$). Any differences of over two points were discussed and agreed upon. The rubric and scoring procedure were reviewed by two ELT assessment specialists and piloted with 15 students outside the main sample before data collection, consistent with the validation procedures applied to the other instruments in this study.

Critical Thinking Skills Test

Items derived from the Watson–Glaser Critical Thinking Appraisal (Watson & Glaser, 1980) were used to measure critical thinking. The test consisted of five subtests: inference, recognition of assumption, deduction, interpretation, and evaluation of arguments. Items were reviewed by two content experts and a language specialist for cultural appropriateness and linguistic accessibility before administration. Cronbach's alpha for the adapted scale was $\alpha = .86$, indicating good internal consistency.

Student Engagement Scale

Student engagement was measured using a Likert-type questionnaire grounded in the three-component model of engagement (Fredricks et al., 2004): behavioural, emotional, and cognitive engagement. The questionnaire comprised 18 items (six per component), each rated on a five-point scale from 1 (strongly disagree) to 5 (strongly agree). The scale was adapted for the Ethiopian secondary school context following expert review and a pilot test with 15 students not included in the main study. Cronbach's alpha was $\alpha = .88$.

Table 1. Reliability Summary

Instrument	Cronbach's Alpha	No. of Items
Writing Test Rubric	$\alpha = .82$	5 dimensions
Critical Thinking Scale	$\alpha = .86$	25 items (5 subscales)
Engagement Scale	$\alpha = .88$	18 items (3 components)

Note. All values exceed the acceptable threshold of $\alpha \geq .70$ (Field, 2018), indicating good internal consistency.

2.4. Operational Definitions of Collaboration Models

For this study, three collaboration models were operationally defined before data collection, based on Bronstein's (2003) interdisciplinary collaboration framework:

- **Consultative collaboration:** Interaction is episodic and issue-specific; one professional seeks input from another without sustained joint planning or co-implementation.

- **Coordinative collaboration:** Professionals meet regularly, engage in joint planning, and align their individual activities toward shared student support goals, though implementation remains largely separate.
- **Integrated collaboration:** Professionals engage in co-implementation, shared responsibility, and real-time collaboration within instructional settings.

These three categories operationalise Bronstein's (2003) interdisciplinary collaboration framework, which describes professional partnership as varying along a continuum of interdependence, from limited coordination to fully shared practice. Consultative collaboration corresponds to Bronstein's lowest level of interdependence (episodic consultation without joint accountability); coordinative collaboration corresponds to structured but parallel practice; and integrated collaboration corresponds to Bronstein's highest level, in which professionals co-construct interventions and share outcomes. This theoretical alignment guided both the interview protocol, which probed frequency, planning structure, and shared responsibility, and the coding scheme used to classify participant accounts (see Participants and Sampling).

2.5. Data Analysis Procedures

Assumption Testing

Before conducting parametric analyses, the following assumptions were tested. Normality was assessed using Shapiro–Wilk tests for all dependent variables at both pretest and posttest. All values were non-significant ($p > .05$), indicating no meaningful departure from normality. Multivariate outliers were assessed using Mahalanobis distance for the writing-performance and critical-thinking change scores; no cases exceeded the critical χ^2 value ($df = 2$, $p < .001$), indicating no influential multivariate outliers. For MANOVA, homogeneity of variance-covariance matrices was assessed using Box's M test (Box's M = 14.32, $F(6, 143,022) = 2.35$, $p = .028$). The result was non-significant at the conservative $\alpha = .001$ threshold, indicating adequate homogeneity. Sphericity is automatically satisfied with two-level within-subject factors, and therefore, Mauchly's test was not applicable. For the paired-samples t-test, normality of the pre–post difference scores for engagement was assessed using the Shapiro–Wilk test ($W = .974$, $p = .211$), supporting the parametric assumption; Levene's test was additionally non-significant. Full assumption-testing statistics are reported in Appendix A.

Quantitative Analysis

One-way repeated-measures MANOVA was conducted to examine pre-to-post changes simultaneously across writing performance and critical thinking. The MANOVA was interpreted in two stages: (1) the omnibus multivariate effect was assessed using Wilks' Lambda and Pillai's Trace; (2) univariate follow-up F-tests were examined for each dependent variable conditional on a significant multivariate result. Effect sizes were reported using partial eta squared (η^2). A paired-samples t-test was conducted separately for student engagement, with effect size reported as Cohen's d. All analyses were conducted using IBM SPSS Statistics Version 25.

Qualitative Analysis

Interview and focus group discussion (FGD) data were analysed using the six-phase thematic analysis procedure described by Braun and Clarke (2006): familiarisation, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. Analysis was conducted inductively at the semantic level. Member-checking was conducted with three participants to enhance credibility.

3. Results

The results of the quantitative and qualitative strands provide complementary evidence on the nature and effects of interdisciplinary collaboration between ELT teachers and social workers. The qualitative findings characterize the types and enabling conditions of collaboration, while the quantitative findings provide empirical evidence of associations between collaboration and student academic and psychosocial outcomes.

3.1. Thematic Analysis of Interdisciplinary Collaboration

Thematic analysis of interview and FGD data yielded four broad themes: collaboration models, student outcomes, challenges, and enabling factors. The themes and codes that make them up are summarized in Table 2.

Table 2. Major Themes and Corresponding Codes.

Theme	Codes	Description
Collaboration Models	Consultation, Coordination, Integration	Types of collaboration practised in schools
Student Outcomes	Language improvement, Engagement, Emotional stability	Academic and psychosocial benefits
Challenges	Role ambiguity, Time constraints, Lack of policy	Barriers to effective collaboration
Enabling Factors	Communication, Training, Leadership support	Conditions that enhance collaboration

The theme of collaboration models indicates that there are varying degrees of collaboration in schools, and it is not a uniform experience. This is because of the extent to which the institutional system enables or hinders interdisciplinary interaction. The counsellor is only brought in when there is a serious issue, as one ELT teacher said: 'We wait until we have a serious problem to use the counsellor. There is no system for us to work together regularly.' This directly relates to the challenges theme of structural barriers, especially the lack of a formal policy requiring collaboration.

The theme of student outcomes illustrates how collaboration is seen to impact the cognitive and SE domains. Collaborative support was always reported by participants as leading to an increase in emotional stability and student participation, which in turn were correlated with language production. This is supported by evidence that psychosocial wellbeing affects language learning readiness (Dryfoos, 2005).

The theme of challenges reveals systemic impediments to good collaboration, particularly role ambiguity and lack of institutional policy. The structural gaps render the cooperation unfeasible and inconsistent. As one social worker explained: 'I am not sure what exactly my role is in the classroom. We are not always perceived by teachers to be partners.' This highlights the importance of clearly defined professional boundaries and formal partnership agreements between ELT teachers and social workers.

The theme for enabling factors highlights the importance of communication, professional training, and leadership commitment for collaboration to be productive. Teachers and social workers reported more effective and sustained partnerships when principals actively encouraged interdisciplinary practice and allowed time for teachers to work together to plan. This resonates with what Friend and Cook (2017) noted is a prerequisite for effective professional collaboration: administrative support.

3.2. Models of Interdisciplinary Collaboration

Based on the data collected, three different models of collaboration were identified, which matched the operational definitions of collaboration that had been set before the data was gathered.

The most common and widely used model is consultative, but this is restricted in terms of scope and sustainability. It is reactive – students only receive support when problems have arisen and not as a preventive or developmental measure. The coordinative model adds some level of structural regularity through common planning and allows professionals to develop more concerted and anticipatory interventions. The integrated model is the most advanced of collaboration and is a combination of co-implementation and shared accountability. Participants reported that integrated arrangements were settings in which language instruction and psychosocial support were most cohesively woven together, as Dryfoos (2005) suggested that complex educational problems must be addressed in a comprehensive and integrated way.

Table 3. Interdisciplinary Collaboration Models.

Model	Key Characteristics	Level of Integration	Practical Example
Consultative	Episodic, issue-triggered communication	Low	The teacher refers a student to the social worker following a behavioural incident.
Coordinative	Regular joint planning; separate implementation	Moderate	Weekly meetings to align instructional and support interventions
Integrated	Co-implementation: shared responsibility in the classroom	High	A social worker co-facilitates writing workshops addressing trauma-related writing blocks.

3.3. Quantitative Results

Multivariate Analysis (MANOVA)

A one-way repeated measures MANOVA was performed to study the changes in writing performance (pre-test, post-test) in conjunction with critical thinking. The overall multivariate test was statistically significant: Wilks' Lambda $\Lambda = .31$, $F(2, 58) = 63.74$, $p < .001$, partial $\eta^2 = .69$; Pillai's Trace $V = .69$, $F(2, 58) = 63.74$, $p < .001$. The multivariate statistics support the notion that the dependent variable vector did change significantly from pretest to posttest. Univariate follow-up tests are shown in Table 4.

Table 4. Repeated-Measures MANOVA Results for Writing Performance and Critical Thinking (n = 60)

Variable	Pre-test M (SD)	Post-test M (SD)	F(1, 59)	p-value	Partial η^2
Writing Performance	56.32 (8.45)	68.74 (7.91)	52.61	< .001	.47
Critical Thinking	54.18 (7.88)	66.29 (8.02)	48.37	< .001	.45

Note. Partial η^2 (Effect Sizes) is interpreted as Large (Cohen, 1988). The significant overall MANOVA is reported with results presented conditionally.

There was a statistically significant increase in writing performance and critical thinking from pretest to posttest. Large effect sizes ($\eta^2 = .47$ and $.45$, respectively) suggest significant change from pre to post, indicating meaningful improvements in both academic skills during the time of interdisciplinary collaboration. Without a control group, these findings are interpreted as associations, rather than causal effects.

Paired-Samples t-Test (Student Engagement)

Table 5. Paired-Samples t-Test Results for Student Engagement (n = 60)

Variable	Pre-test M (SD)	Post-test M (SD)	t(59)	p-value	Cohen's d
Engagement	2.91 (0.52)	3.87 (0.48)	11.42	< .001	1.47

Student engagement increased significantly from pretest to posttest, $t(59) = 11.42$, $p < .001$, Cohen's $d = 1.47$. The very large effect size suggests that the change in engagement was quite large. This is in line with anecdotal evidence indicating an increase in students' engagement and motivation when their social and emotional needs were met with a supportive collaborative approach.

4. Discussion

The purpose of this study was to investigate the models and relationships of interdisciplinary cooperation of ELT teachers and social workers in secondary schools in Ethiopia. The qualitative and quantitative strands provide a cohesive and complementary description of the nature of such collaboration and the potential it can generate.

4.1. Collaboration Models and Institutional Conditions

Three types of collaboration models were identified consultative, coordinative and integrated—which are consistent with and expanded on Bronstein's (2003) interdisciplinary collaboration model, but build on this in the context of an African secondary school. Qualitative participants linked the integrated model with the most comprehensive student support, as it was a co-implementation and shared responsibility. This aligns with the wider evidence of professional working in education that explains that the degree of integration is a crucial element in determining the effectiveness of professional working (Friend & Cook, 2017). The current consultative practices in most schools are due to the structural conditions of Ethiopian secondary schools, such as the lack of formal policy, role ambiguity and little protected time for co-professional activities (MoE, 2020).

4.2. Psychosocial Mediation of Academic Outcomes

When the statistically significant gains in writing performance and critical thinking were compared to the gains found in other studies, they are consistent with the findings that school-based social work services, when integrated with instructional practice, produce positive impacts on academic outcomes (Franklin et al., 2012). Qualitative evidence supports this relationship, as participants repeatedly reported that, by supporting trauma, anxiety, and social disconnection, students were able to participate more fully in language learning tasks. This aligns with the theoretical suggestion that psychosocial wellbeing is a mediating variable between cognitive engagement and language acquisition readiness (Dryfoos, 2005; UNESCO, 2021).

4.3. Engagement as a Social and Emotional Phenomenon

Students' motivational orientation towards learning was found to be very responsive to the collaborative support environment, with a particularly large effect size noted for student engagement ($d = 1.47$). Qualitative accounts support this finding, and teachers and social workers report that students who were disengaged became more participatory following coordinated emotional and academic support. This supports Friend and Cook's (2017) claim that “engagement is not just a pedagogical variable; it is a relationship and emotional variable that is created through the quality of relational and emotional support that is provided for students.”

Table 6. Joint display: integration of qualitative and quantitative findings by collaboration model.

Collaboration Model	Qualitative Evidence	Quantitative Indicator / Convergence
Consultative	Reactive, issue-triggered support; described by participants as the most common but least sustained model (e.g., “We wait until we have a serious problem to use the counsellor.”)	Associated qualitatively with the lowest reported continuity of academic and psychosocial support
Coordinative	Regular joint planning with separate implementation; participants described more anticipatory, planned interventions than under consultative arrangements	Associated qualitatively with moderate, planned support; no distinct quantitative subgroup was analysed for this model
Integrated	Co-implementation and shared responsibility in the classroom; most frequently linked by participants to visible gains in writing, critical thinking, and emotional stability	Converges descriptively with the sample-wide pre-to-post gains in writing performance ($\eta^2 = .47$), critical thinking ($\eta^2 = .45$), and engagement ($d = 1.47$); convergence is descriptive, not a formally tested between-model comparison

Note. This joint display summarises, rather than statistically tests, the correspondence between qualitative accounts and quantitative pre-post change; no formal between-model or between-school analysis was conducted (see *Meta-Inference*).

4.4. Meta-Inference: Integrating Both Strands

Through the consistent relationships between more integrated collaboration models and more positive outcomes, convergence between the two strands is observed. The integrated model was described as the most effective model qualitatively, and participants who described more integrated collaboration also tended to come from the subgroup of students showing the largest pre-to-post gains, although this pattern was not tested as a formal between-school statistical comparison. Despite the lack of a formal control group, this convergence lends confidence to the overall pattern.

Another area of difference, however, is informative: the quantitative effect sizes are large but may underestimate the potential gains possible within a system of integrated collaboration that is truly systematic and supported by the system in which it operates, since the qualitative data show that even the most integrated schools had structural barriers to collaboration that could be realized (time constraints, role ambiguity, and policy gaps). This meta-inference, which could not have been produced by either set of data alone, suggests that institutional development is a changeable factor that may impact academic and psychosocial outcomes.

4.5. Structural Support and Policy

The challenges of the qualitative theme – role ambiguity, lack of policy, time constraints – highlight why there may be variations in the quality of improvements observed within schools. The qualitative evidence indicates that where there was enabling leadership and where the professional roles were well defined, more productive and enduring collaborative relationships arose. This aligns with Dominelli (2018), who argued that structural support is not a peripheral condition of equitable professional collaboration but an integral one and with Tadesse et al. (2018), who identified the critical role of the structural conditions in the quality of teaching and learning in Ethiopian higher education.

5. Limitations

The following are some of the important limitations of this study. Since there is no control group, the observed improvement may be due to maturation effects, regression to the mean, or other confounding factors, and no causal relationship between the observed improvement and the interdisciplinary collaboration can be inferred. Findings are limited in generalizability as a purposive sample of 60 students from selected schools in one region was used. The qualitative sample is small, but for the interpretative purpose, appropriate. Further, though there were assumption tests (Appendix A), some of the instruments had been adapted instead of newly validated, and psychometric development might enhance replicability.

6. Conclusion

The present study is an empirical contribution to the understanding of the possible connection between the interdisciplinary collaboration of ELT teachers and social workers and the academic and psychosocial outcomes of students in secondary schools of Ethiopia. The study's findings are more comprehensive than either strand would be alone, as it incorporates quantitative data on measurable improvement in writing competence and quantitative data on significant pre-to-post improvement in critical thinking skills, along with qualitative data on improvements in collaboration processes.

Three types of collaboration models (consultative, coordinative, integrated) have been identified, offering a theoretically informed and empirically grounded taxonomy that can be used to guide professional practice and institutional design. The results indicate that the greater the degree of collaboration integration, the greater the student benefits, both in terms of scope and duration, but on a tentative basis only, because of the absence of formal experimental evidence.

In practical terms, the results of this study highlight the need for appropriate institutional arrangements, such as formal policies, well-defined professional roles, time set aside for interprofessional planning and leadership support, to facilitate effective interdisciplinary working. If these are not in place, it is unlikely that collaboration will be regular and have a significant effect.

Future studies should have a randomised or quasi-experimental design with control groups, a longer follow-up to determine the long-term effects and study the fidelity of implementation in varied educational settings. Measures of collaboration fidelity that were valid and specific to contexts would further this field.

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Declaration of Conflict of Interest

The author has no conflict of interest to declare with respect to this manuscript.

Author Contributions

The author designed and carried out the study, analyzed the findings and wrote the paper.

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Appendix A: Assumption-Testing Results

Normality Tests (Shapiro–Wilk)

Variable	Time Point	W	p
Writing Performance	Pretest	.971	.179
Writing Performance	Posttest	.968	.137
Critical Thinking	Pretest	.974	.214
Critical Thinking	Posttest	.967	.129
Student Engagement	Pretest	.973	.198
Student Engagement	Posttest	.969	.148

Note. All $p > .05$, indicating no significant departure from normality.

Box's M Test (MANOVA)

Box's $M = 14.32$, $F(6, 143,022) = 2.35$, $p = .028$. Non-significant at the conservative $\alpha = .001$ threshold, indicating adequate homogeneity of variance-covariance matrices.

Levene's Test (Paired t-Test for Engagement)

$F(1, 118) = 0.64$, $p = .425$. Homogeneity of variance assumption satisfied.