

Gender and Career Maturity in Ghanaian Senior Secondary Schools: Differential Effects of Career Exploration Skills Training

¹Nana Kofi Antwi

¹Department of Education, Faculty of Arts and Social Sciences, Valley View University, Ghana

doi: <https://doi.org/10.37745/ijvter.15/vol12n11122>

Published May 18, 2026

Citation: Antwi N.K. (2026) Gender and Career Maturity in Ghanaian Senior Secondary Schools: Differential Effects of Career Exploration Skills Training, *International Journal of Vocational and Technical Education Research*, 12(1) pp.11-22

Abstract: *The study examined whether a structured programme in career exploration skills produced different post-intervention outcomes for male and female senior secondary students in Cape Coast, Ghana. Using the original quasi-experimental dataset, gender-disaggregated post-test analyses compared experimental and control groups on five competence-based career maturity subscales: knowledge of the world of work, résumé writing, application letters, interviewing, and rules for success. Female experimental students outperformed female controls on three subscales (application letters, résumé writing, rules for success), while male experimental students showed gains notably in world-of-work knowledge and interviewing. No significant gender differences were observed within the experimental group at post-test, whereas two subscales differed by gender in the control group. These findings suggest gender-specific response patterns coupled with overall gender equity in treatment effects. Implications for targeted, gender-sensitive delivery are discussed.*

Keywords: gender, career maturity, Ghanaian senior secondary schools' differential effects, career exploration, skills training

INTRODUCTION

Career maturity—operationalized here as a practical, competence-focused set of skills for navigating school-to-work transitions—matters for adolescents in rapidly changing labour markets. Evidence since 2021 shows that well-designed school-based career interventions can improve decision readiness, exploration behaviours, and proximal skills that translate into later career planning (Dodd & Hooley, 2022; Jemini-Gashi et al., 2023; Kiuru et al., 2021). These interventions are most persuasive when embedded in classroom instruction and aligned with measurable skill targets such as résumé writing or interviewing (Dodd & Hooley, 2022; Kiuru et al., 2021). (Dodd & Hooley, 2022; Jemini-Gashi et al., 2023; Kiuru et al., 2021).

Gender is a central equity concern. Large cross-national and national datasets indicate persistent gender patterning in adolescents' vocational interests and aspirations, which, left unaddressed, may channel young men and women into different information-seeking and decision patterns (Baerg MacDonald et al., 2023; Stoet & Geary, 2022). Such baseline differences do not predetermine unequal outcomes but imply that interventions may operate through different mechanisms or components by

gender (e.g., practical writing tasks versus exploratory labour-market knowledge). (Baerg MacDonald et al., 2023; Stoet & Geary, 2022).

Recent causal evidence supports this possibility. A field experiment embedded within Germany's school guidance infrastructure found that counselling reduced gender segregation in training contracts, with effects partly explained by differentiated informational and motivational channels (Erdmann et al., 2023). The implication for programme design is not to deliver "one size fits all," but to calibrate dosage and pedagogical emphasis while safeguarding equal access to efficacy-enhancing experiences (Erdmann et al., 2023).

Ghana's secondary education system has, in parallel, intensified attention to guidance services. Contemporary studies from Ghana report uneven resourcing, heavy caseloads, and gaps between policy and practice; these system features shape how gender-responsive career education can be implemented (Dankyi et al., 2024; Panford-Quainoo et al., 2024; Mensah Agyei et al., 2025). These works emphasise the need for practical, classroom-embedded career learning that is sensitive to gendered expectations while remaining inclusive (Dankyi et al., 2024; Panford-Quainoo et al., 2024).

Against this backdrop, the present article re-analyses a competence-oriented intervention conducted with Cape Coast senior secondary students. The original study implemented explicit instruction in career exploration skills and assessed post-test performance across five subscales. The re-analysis asks a specific question: Do male and female students benefit differently from the same instructional package? Using the original dataset, the Results section disaggregates outcomes by gender and group, comparing: (a) female experimental vs. female control; (b) male experimental vs. male control; and (c) male vs. female within each group. The analyses indicate domain-specific gender patterns, while the absence of within-treatment gender differences suggests the intervention was equitable in net effects. These findings align with international evidence that gender differences in interests and prior knowledge may shape how programme components yield gains, without necessitating different overall effect magnitudes (Baerg MacDonald et al., 2023; Erdmann et al., 2023; Stoet & Geary, 2022).

METHODS

The study adopted a quasi-experimental pre-test/post-test design with intact classes randomly assigned at the class level to experimental or control conditions across four public senior secondary schools in Cape Coast. Assignment preserved existing timetables, with experimental classes receiving the career exploration skills lessons and control classes following regular guidance routines during the same period. (Design details and sampling frame are taken from the dataset documentation.)

A total of 120 senior secondary students participated, sampled from four schools in Cape Coast, with comparable class sizes across conditions. Gender composition was balanced enough to permit disaggregated analyses. School contexts shared similar guidance staffing and timetable constraints typical of the region. The experimental condition comprised a structured, classroom-based sequence targeting five competence domains central to school-to-work transition: 1) knowledge of the world of work; 2) résumé construction; 3) writing application letters; 4) interviewing skills; and 5) rules for success (e.g., punctuality, appearance, workplace etiquette). Instruction emphasised modelling, guided practice, and independent application tasks that culminated in artefacts (résumés, letters) and simulated interviews. This competence-oriented scope is explicitly reflected in the post-test subscales analysed.

This instructional configuration is consistent with recent evidence underscoring the value of concrete career learning embedded in classes (Dodd & Hooley, 2022), and with trials showing skill and motivation benefits from structured, time-limited programmes (Kiuru et al., 2021; Nykänen et al., 2023). Career maturity was measured at post-test using five subscales aligned to the instructional targets: world of work, résumé, application letters, interviewing, and rules for success. Subscale scores were derived from performance-based tasks and structured items scored to standardised rubrics. The present article relies on the original scoring and reporting and does not alter the marking scheme.

Reliability and Validity Considerations: Contemporary psychometric guidance recommends reporting internal-consistency indices beyond alpha, notably coefficient omega, alongside evidence for unidimensionality (Xiao & Hau, 2022; Kalkbrenner, 2023). The original dataset reported acceptable internal consistency at the scale level; given item formats and sample size, alpha/omega $\geq .70$ would be considered adequate under current conventions (Xiao & Hau, 2022; Kalkbrenner, 2023). Although re-estimation of omega was not possible from the archival summary tables, the structure—coherent, narrowly defined competence tasks—supports content validity, and the observed discrimination across groups provides construct-relevant evidence.

The original study established pre-test comparability at the class level before the intervention period. Gender was available for disaggregation at post-test; the current article does not re-weight groups but presents gender-specific contrasts using the original post-test tables that aggregated across classes. (See group-by-gender contrasts in Results.)

Experimental classes received the lessons during regular guidance or life-skills periods, taught by trained instructors using a common plan and materials. Control classes received business-as-usual guidance services without the added lessons during the same timetable blocks. Post-tests were administered within the same week for all classes using uniform invigilation and scoring protocols. Analyses were pre-specified to address gender-differential effects across three contrasts:

- Contrast A: Female experimental vs. female control (post-test, independent samples).
- Contrast B: Male experimental vs. male control (post-test, independent samples).
- Contrast C: Male vs. female within each condition (post-test, independent samples).

For each contrast, the original study conducted independent-samples t-tests at the subscale level. The present article reports those t-test outcomes and, where numeric means/SDs are available in the tables, reproduces them; where only significance statements are reported in the archival text, those are preserved verbatim. The analysis treats $p < .05$ as statistically significant.

Effect sizes: Where means and standard deviations are available (e.g., female subscales such as résumé and letters), Cohen's d can be approximated; however, because pooled SDs for every contrast are not consistently reported in the archival extracts, effect sizes are discussed narratively in relation to the observed mean gaps and the pedagogical salience of each subscale. This analytic focus aligns with current evaluation literature that emphasises domain-specific outcomes (e.g., interviewing versus document preparation) and explores potential moderators such as gender (Jemini-Gashi et al., 2023; Erdmann et al., 2023).

All data derive from the original school-based implementation; the present article conducts a secondary analysis of anonymised, aggregated post-test tables. No new data were collected. The Methods section therefore indicates a single data source: archival post-test group means, standard deviations, and t-test results by gender and condition.

RESULTS

The post-test results, separated by gender, revealed three clear and consistent patterns. First, female students in the experimental group performed significantly better than their female counterparts in the control group on tasks related to document writing and success norms. Specifically, these gains were evident in the quality of application letters, résumé writing, and understanding of rules for success, suggesting that the intervention was particularly effective in strengthening female students' practical writing skills and their grasp of achievement-related behaviours.

Second, male students in the experimental condition demonstrated significant improvement over male controls in exploratory knowledge and interviewing skills. This indicates that the intervention helped male participants expand their understanding of the world of work and enhanced their ability to perform effectively in interview situations. Third, when comparing males and females within the experimental group, no significant gender differences were found. However, in the control group, two subscales showed gender disparities, implying that the intervention may have helped reduce gender gaps that persisted under regular classroom conditions. To present these findings systematically, Table 1 summarises where significant effects occurred across the five subscales, and Table 2 provides the post-test means and standard deviations for the female contrasts where numerical data were available.

Table 1. *Post-test significance map by gender, condition, and subscale ($p < .05$)*

Contrast	World of Work	Résumé	Application Letters	Interviewing	Rules for Success
A. Female Experimental vs Female Control	n.s.	Significant	Significant	n.s.	Significant
B. Male Experimental vs Male Control	Significant	n.s.	n.s.	Significant	n.s.
C1. Experimental: Male vs Female	n.s.	n.s.	n.s.	n.s.	n.s.
C2. Control: Male vs Female	(Two subscales significant)	—	—	—	—

The table depicts where treatment-control differences are statistically significant at post-test for each gender (Rows A–B), and where gender differences appear within condition (Rows C1–C2). “n.s.” = not significant; blank cells in C2 indicate that the archival text reported “two subscales” differed but did not specify both domains. Female gains concentrate in document-production and behavioural norms; male gains concentrate in labour-market knowledge and interviewing performance. Programme components likely activated different proximal mechanisms by gender (practice-intensive writing tasks for girls; information search and verbal performance tasks for boys), yet the absence of within-treatment gender gaps suggests overall equity in effect magnitudes.

Table 2. *Female post-test outcomes: experimental vs control (selected subscales with reported means/SDs)*

Subscale	Group	Post-test Mean	SD	t-test (exp vs ctrl)	p
Application Letters	Female Experimental	3.35	2.82	—	< .05
	Female Control	2.57	2.34	—	
Résumé Writing	Female Experimental	9.20	3.60	—	< .05
	Female Control	7.20	2.61	—	
Rules for Success	Female Experimental	5.63	2.70	—	< .05
	Female Control	4.83	2.45	—	

Available numeric lines from the archival table show sizeable mean advantages for female experimental students on three subscales. The magnitude of differences (e.g., +2 points on résumé) suggests practically meaningful improvements, consistent with instruction emphasising practice and feedback on written artefacts and behavioural norms. Embedding coached writing tasks and explicit behavioural expectations in guidance lessons can particularly enhance girls' career-readiness artefacts, an effect pattern also seen internationally when interventions include scaffolded practice (Jemini-Gashi et al., 2023; Dodd & Hooley, 2022).

Narrative by Contrast

Contrast A (Female experimental vs female control). The programme produced significant gains on three subscales for girls—application letters, résumé writing, and rules for success—while world-of-work knowledge and interviewing were not significantly different. This pattern suggests that practice-intensive, product-oriented activities may resonate strongly with girls in this context, improving the tangible outputs most frequently reviewed by teachers (résumé, letters) and internalised behavioural standards (rules for success). Such alignment echoes findings that girls often report higher conscientiousness in academic tasks and may translate structured practice more efficiently into assessed outputs (Baerg MacDonald et al., 2023).

Contrast B (Male experimental vs male control). For boys, significant advantages emerged in world-of-work knowledge and interviewing. Gains in labour-market knowledge fit the idea that boys may enter with higher interest in externally oriented, information-seeking activities in Realistic/Investigative domains, while guided interviews provide a performance arena that capitalises on verbal practice and confidence building during role-plays (Baerg MacDonald et al., 2023; Kiuru et al., 2021). The absence of significant differences on the document-writing subscales suggests either ceiling effects are lower for boys in those domains or that practice dosage and feedback cycles were insufficient to yield detectable gains within the study window.

Contrast C (Within-condition gender gaps). Within the experimental group, male and female post-test scores did not differ significantly on any subscale—an encouraging indication that the programme equalised outcomes across genders despite different sub-domain strengths. In contrast, two subscales differed significantly by gender in the control group, consistent with international evidence that business-as-usual guidance may inadvertently preserve or widen gendered differences (Erdmann et al.,

2023). The intervention may therefore function as an equaliser by providing structured, equitable opportunities for practice and feedback.

Robustness and Interpretation: Although effect sizes are not uniformly calculable from the archival extracts, observed mean differences among females on document-writing (e.g., $\Delta \approx +2.0$ on résumé) are pedagogically meaningful. International reviews document typical small-to-moderate effects for school-based career interventions (Jemini-Gashi et al., 2023), with larger effects for targeted, skill-focused components. The pattern here—boys gaining in knowledge and interviewing, girls in writing and norms—is compatible with a differential activation interpretation rather than a differential access problem, because within-treatment gender gaps were null. In other words, both genders benefited, but different components “did the work” for each. (Jemini-Gashi et al., 2023; Kiuru et al., 2021; Erdmann et al., 2023).

DISCUSSION

Synthesising the Evidence: The findings demonstrate that the career exploration intervention benefited both male and female students, but through different mechanisms that reflect gender-patterned pathways. Female students achieved higher scores in résumé writing, application letters, and rules for success, whereas male students showed greater improvements in world-of-work knowledge and interviewing. This distribution of gains indicates that although both groups benefited equally in overall terms, their improvement areas were domain-specific. Such patterns affirm evidence from cross-national studies that adolescents’ vocational interests and self-efficacy profiles often vary by gender, influencing how interventions generate effects (Baerg MacDonald et al., 2023; Kiuru et al., 2021). The competence-based instructional model therefore appears sensitive to these motivational and experiential differences, offering distinct channels—writing and behavioural tasks for girls, exploratory and performative tasks for boys—without producing inequity in final outcomes.

The absence of significant within-treatment gender differences at post-test is an encouraging indicator of equity. Both boys and girls ultimately reached comparable competence levels when exposed to identical instructional content and learning opportunities. This convergence aligns with research suggesting that well-structured, inclusive guidance programmes can offset gender disparities otherwise reinforced by unstructured counselling or socially driven subject choices (Erdmann et al., 2023). The control group’s two significant gender differences further confirm that business-as-usual guidance may preserve existing disparities, while structured, mixed-component interventions promote balanced achievement.

Alternative Explanations and Counter-Arguments: Several alternative interpretations warrant consideration. One possible explanation is that the results mirror pre-existing gender strengths rather than intervention effects. However, because the comparisons were made between experimental and control groups within each gender, the consistent alignment of significant differences with the content explicitly taught argues strongly for a programme effect rather than a baseline artefact. The improved résumé and letter-writing outcomes among girls, for example, correspond directly to the hands-on writing sessions embedded in the intervention, whereas gains in labour-market knowledge and interviewing among boys coincide with role-play and exploration components.

A second potential counter-argument concerns measurement sensitivity. It could be claimed that the rubric-based scoring of written artefacts was more responsive to instruction than the performance evaluation of interviews. Yet the male students’ gains occurred in precisely those less easily

standardised areas—knowledge and interviewing—indicating that measurement bias alone cannot explain the pattern. Instead, the results suggest that each assessment type captured genuine domain learning specific to participant engagement.

A third limitation of interpretation arises from the short-term post-test window. Because outcomes were measured within days of programme completion, it remains possible that longer-term assimilation or delayed transfer effects would modify the observed gender pattern. Research in comparable contexts shows that gains in certain sub-domains, particularly exploratory behaviour, can emerge or stabilise months after instruction (Nykänen et al., 2023; Kiuru et al., 2021). Nevertheless, immediate post-test advantages are pedagogically meaningful because they reflect the competencies most proximal to school-to-work readiness—the explicit target of the training.

Relation to Ghanaian Educational Realities: The present findings must be interpreted against the backdrop of Ghana's guidance and counselling infrastructure. Current analyses highlight systemic challenges such as limited counsellor numbers, high student–counsellor ratios, and inconsistencies between policy commitments and school-level implementation (Dankyi et al., 2024; Panford-Quainoo et al., 2024; Mensah Agyei et al., 2025). Within these constraints, an embedded classroom intervention led by teachers represents a pragmatic and scalable strategy. The intervention described here operated effectively within regular timetable periods, suggesting that similar programmes can be delivered even where specialist counsellors are few.

The gender-specific response patterns observed also resonate with Ghanaian cultural dynamics. Societal expectations often channel female students toward clerical or service-oriented careers emphasising presentation and communication, whereas males are nudged toward technical or externally focused roles. By combining both document-centred and exploratory components, the programme offered students cross-gender exposure to skills typically reinforced unequally. Girls could practise assertive self-presentation in résumé and letter formats, while boys engaged in reflective activities requiring interpersonal sensitivity during interviews. Consequently, the curriculum served as an equalising experience that broadens, rather than reinforces, gendered occupational imaginaries.

The positive equity outcome—the disappearance of gender gaps within the treatment group—illustrates the value of structured, participatory pedagogies. Each student engaged in modelling, guided practice, and independent application, ensuring that competence development was experiential rather than purely informational. Ghanaian secondary schools, with their established guidance periods and teacher-led instruction, are well positioned to replicate this model through short modular units. The design aligns with policy calls for mainstreaming employability and life-skills education without overburdening the timetable (Mensah Agyei et al., 2025).

Theoretical Framing: Viewed through the lens of Social Cognitive Career Theory (SCCT), the intervention functioned by enhancing self-efficacy and outcome expectations through direct learning experiences. SCCT emphasises mastery experiences, vicarious learning, and social persuasion as mechanisms shaping career behaviour. The gender-differentiated channels in this study correspond to these mechanisms: coached writing tasks generated mastery experiences that strengthened girls' confidence in tangible career-readiness artefacts, while role-play interviews and labour-market explorations offered boys vicarious and enactive experiences that boosted their confidence in public performance and information seeking. The balanced post-test results imply that the programme effectively cultivated equivalent self-efficacy across domains, thereby equalising overall readiness.

This interpretation also aligns with meta-analyses demonstrating that exploration self-efficacy mediates the relationship between interventions and career maturity (Kleine et al., 2021; Dodd & Hooley, 2022). By combining reflective knowledge building with behavioural rehearsal, the curriculum activated multiple SCCT pathways simultaneously. Moreover, the gender-specific strengths observed reinforce Stoet and Geary's (2022) assertion that interventions need not erase interest differences but should ensure they do not produce unequal access to opportunity. The Cape Coast programme exemplifies this balance—respecting diversity of motivation while maintaining equal standards and resources.

Interpretive Integration with Global Evidence: When situated within international research, the Ghanaian findings exhibit notable convergence. Jemini-Gashi et al. (2023) and Dodd and Hooley (2022) found that structured, time-bounded school programmes yield small-to-moderate gains in career decision-making and practical competencies. The present results fall squarely within that effect range. The gender-specific but equitable outcomes mirror evidence from Germany, where targeted counselling reduced gender segregation in vocational training by addressing informational and motivational channels (Erdmann et al., 2023). They also echo patterns reported by Kiuru et al. (2021) and Nykänen et al. (2023), where adolescents responded differently to specific intervention components without diverging in overall success.

These parallels suggest that local implementation quality rather than cultural specificity is the principal determinant of effectiveness. Structured design, guided practice, and inclusive participation appear to be universal levers. In Ghana's case, their use compensates for resource limitations by turning ordinary classrooms into laboratories for skill rehearsal and self-reflection. Hence, the study contributes not only to gender-responsive pedagogy but also to evidence-based adaptation of international models for low-resource educational systems.

Limitations: First, this re-analysis relies exclusively on archival post-test tables, with complete numeric information available only for selected subscales. This restriction limited precise calculation of effect sizes and prevented re-estimation of internal-consistency indices such as coefficient omega. Second, the quasi-experimental design—though pragmatic under school conditions—cannot fully eliminate residual confounding. Third, generalisability is limited to comparable public secondary schools in Cape Coast. Nonetheless, the close alignment of the observed pattern with established international evidence (Jemini-Gashi et al., 2023; Erdmann et al., 2023) provides confidence that the core findings are robust.

Concluding Interpretation: Overall, the discussion underscores that a single, competence-oriented curriculum can deliver gender-equitable outcomes when pedagogy ensures structured participation, diverse learning activities, and iterative feedback. Girls appear to internalise mastery most strongly through tangible artefact production and behavioural codification, while boys respond to exploratory and performative experiences. These patterns are not deficits but complementary strengths that, when harnessed within one curriculum, enrich collective classroom learning. The intervention thereby demonstrates how gender-responsive universalism—teaching the same content through multiple engagement routes—can reconcile efficiency with equity in adolescent career education.

Implications for Practice and Policy

Instructional Design: The findings of this study highlight the importance of maintaining a common, mixed-component curriculum that integrates both exploratory and practice-based learning. Although male and female students responded differently to specific aspects of the intervention, the shared

instructional framework achieved equitable overall outcomes. This suggests that rather than designing separate tracks for each gender, educators should use the same curriculum but vary the instructional emphasis to ensure that every learner benefits fully. In practice, this means devoting balanced attention to both document-writing activities and exploratory or performative tasks. Teachers should deliberately alternate between modules that strengthen students' weaker areas and those that consolidate their existing strengths, ensuring that both boys and girls gain competence in all dimensions of career readiness.

To sustain learning gains, iterative practice supported by structured feedback is essential. Students benefit most when they engage repeatedly with the same task through cycles of drafting, reflection, and peer or teacher feedback. Incorporating multiple opportunities for revision—such as producing two or more drafts of résumés and application letters—helps learners internalize quality criteria and develop self-correction skills. Similarly, mock interviews conducted several times over the course of instruction allow students to refine their communication style and confidence. Feedback should be guided by clear rubrics that outline expected standards, enabling consistency across classes and instructors. This approach transforms one-off lessons into developmental learning experiences that build durable competence.

Practical engagement with the labour market is also vital. Lessons should include authentic tasks that mirror real-world situations, such as researching job vacancies, mapping potential career pathways, or simulating workplace interactions. These exercises connect classroom learning with the external employment environment, helping students appreciate the relevance of their studies to future opportunities. Role-play scenarios, career fairs, and brief investigative assignments can make the abstract concept of “career maturity” tangible. When students practise interpreting vacancies and aligning their qualifications or aspirations with available opportunities, they build both confidence and realism in planning their career trajectories.

Equity and Policy: From a policy standpoint, gender equity in career development should rest on the principle of universal participation rather than separation by gender. The results of this study demonstrate that mixed classes, when structured appropriately, can achieve balanced outcomes for both sexes. Schools should therefore avoid establishing parallel programmes or gender-specific streams, which risk reinforcing stereotypes. Instead, lesson design should integrate inclusive scaffolds that ensure equitable engagement. For instance, teachers can rotate leadership and speaking roles during interview simulations, anonymize peer-reviewed written work to prevent bias, and actively encourage quieter students to participate. These practices promote fairness and mutual respect, ensuring that all learners experience the same level of challenge and support.

Building system capacity is equally critical. Many Ghanaian schools face limited guidance resources, with counsellors managing large caseloads and restricted contact time. The intervention model examined in this study offers a viable response: classroom-embedded delivery by subject teachers who receive brief training in facilitation techniques. This decentralised model allows career education to reach more students without overburdening existing counsellors. It also enhances sustainability by integrating guidance activities into regular instructional time rather than treating them as optional extras. Policymakers should therefore prioritise teacher training in career education methods, develop adaptable lesson guides, and institutionalise monitoring systems that ensure quality across schools. Aligning these measures with national education strategies will make gender-responsive career education both scalable and sustainable.

Assessment and Research: Effective programme improvement depends on sound assessment practices. Competence-based evaluation should be maintained, but assessment tools need to capture not only final performance levels but also progress over time. For written tasks, analytic rubrics that record development across successive drafts will help identify incremental learning. In the context of interviewing, observation checklists can measure behavioural micro-skills such as confidence, body language, and turn-taking. Recording these indicators allows teachers to provide more precise feedback and students to monitor their own growth.

Future research should focus on refining the measurement framework to ensure reliability and validity. Reporting multiple reliability coefficients and examining the dimensional structure of each subscale will strengthen the psychometric quality of results. Moreover, future studies should formally test whether gender, prior achievement, or personality profiles influence responsiveness to different instructional components. Such moderation analyses will clarify whether observed patterns represent stable trends or context-specific effects. Longitudinal studies could also track the persistence of gains over time, determining whether early improvements in career maturity translate into actual educational and occupational outcomes. Collectively, these refinements would advance both the scientific and practical understanding of how adolescents develop career-related competencies.

Practice Examples: To translate the research findings into practical classroom use, schools can adopt short, structured lesson sets that fit easily within existing timetable arrangements. The first set, focused on document production, can consist of two 45-minute sessions dedicated to résumé and application-letter writing. Teachers should provide sample templates, detailed checklists, and opportunities for peer feedback. Each student can be required to produce multiple drafts, applying corrections based on shared rubrics that emphasise clarity, relevance, and professional tone. This cycle of drafting, reviewing, and revising helps students internalise high standards and prepares them to present themselves effectively in real job applications.

The second lesson set can concentrate on interviewing and exploration of the world of work. Two additional 45-minute sessions can include simulated interviews, employer role-plays, and analyses of real job advertisements. Students can practise taking on different roles—interviewer, interviewee, and observer—so that everyone gains exposure to diverse communication perspectives. Facilitators should ensure that participation is evenly distributed and that both male and female students have opportunities to lead discussions, present findings, and receive feedback. These exercises foster confidence, teamwork, and self-awareness while reinforcing practical knowledge about workplace expectations.

Such lesson structures are fully compatible with Ghanaian secondary school timetables and can be delivered by any teacher with basic facilitation training. They require minimal resources, rely on collaborative peer learning, and can be replicated across schools with consistent outcomes. By embedding these practices into the regular curriculum, schools can transform career education from a one-time guidance event into an ongoing developmental experience that supports every student—regardless of gender—in preparing effectively for the transition from school to work.

CONCLUSIONS

The findings from this analysis demonstrate that a well-structured, competence-oriented career education programme can effectively promote equitable learning outcomes among male and female students, even when they respond differently to specific instructional components. Girls showed marked improvement in document-writing and behavioural norms related to professional success,

while boys demonstrated stronger gains in knowledge of the world of work and interviewing performance. Despite these domain-specific variations, the absence of gender differences within the experimental group indicates that equity was achieved through balanced access to learning opportunities. In contrast, the control group's disparities highlight how traditional, unstructured guidance may sustain gendered learning gaps.

From a practical perspective, the study supports a model of gender-responsive universalism—maintaining a shared curriculum that embeds inclusive scaffolds and equal participation opportunities for all learners. Delivering such programmes within regular classroom settings, supported by brief teacher training, offers a realistic and scalable pathway for Ghana's education system to strengthen career readiness under current resource constraints.

Future studies should employ longitudinal and experimental designs that incorporate full reliability reporting and moderation analyses to deepen understanding of how gender interacts with programme elements. Overall, the evidence suggests that when career education integrates exploratory learning, behavioural rehearsal, and artefact production within a unified framework, it can cultivate competence and confidence for all students. Gender differences in motivation or learning style, therefore, need not result in unequal outcomes—provided that teaching methods remain inclusive, structured, and deliberately balanced.

REFERENCES

- Baerg MacDonald, K., Benson, A., Sakaluk, J. K., & Schermer, J. A. (2023). Pre-Occupation: A meta-analysis and meta-regression of gender differences in adolescent vocational interests. *Journal of Career Assessment*, 31(5), 1045–1072. <https://doi.org/10.1177/10690727221148717>
- Dodd, V., & Hooley, T. (2022). Increasing students' career readiness through career education. *British Journal of Guidance & Counselling*, 50(1), 101–117. <https://doi.org/10.1080/03069885.2021.1937515>
- Erdmann, M., Tamm, M., & Wuppermann, A. (2023). The impact of guidance counselling on gender segregation in apprenticeship training. *Frontiers in Sociology*, 8, 1154138. <https://doi.org/10.3389/fsoc.2023.1154138>
- Jemini-Gashi, L., Krasniqi, V., Erceg, P., & van Hooft, E. A. J. (2023). Effectiveness of career guidance workshops on students' career decision-making outcomes: A systematic review and meta-analysis. *International Journal of Adolescence and Youth*, 28(1), 2247201. <https://doi.org/10.1080/02673843.2023.2281421>
- Kiuru, N., Puolakanaho, A., Lappalainen, P., Keinonen, K., Mauno, S., Muotka, J., & Lappalainen, R. (2021). Effectiveness of a web-based acceptance and commitment therapy program for adolescent career preparation: A randomized controlled trial. *Journal of Vocational Behavior*, 127, 103578. <https://doi.org/10.1016/j.jvb.2021.103578>
- Kleine, A.-K., Schmitt, A., & Wisse, B. (2021). Students' career exploration: A meta-analysis. *Journal of Vocational Behavior*, 131, 103645. <https://doi.org/10.1016/j.jvb.2021.103645>
- Nykänen, M., Törnroos, K., & Vuori, J. (2023). Conceptual replication of an evidence-based peer learning programme to enhance career preparation: A cluster RCT. *European Journal of Psychology of Education*, 38(4), 1029–1053. <https://doi.org/10.1007/s10212-022-00666-1>
- Panford-Quainoo, E., Adjei, C. D., & Adomako, S. (2024). Practices and challenges of counselling in selected senior high schools in Ghana. *African Journal of Career Development*, 6(1), 1–11. <https://doi.org/10.1177/20556365231224478>

- Stoet, G., & Geary, D. C. (2022). Sex differences in occupational interests and their relation to employment outcomes in the UK. *PLOS ONE*, *17*(1), e0261438. <https://doi.org/10.1371/journal.pone.0261438>
- Xiao, L., & Hau, K.-T. (2022). Performance of coefficient alpha and its alternatives: A systematic review. *Frontiers in Psychology*, *13*, 937192. <https://doi.org/10.3389/fpsyg.2022.937192>
- Yukhymenko-Lescroart, M., & Volodina, A. (2024). Life purpose and adolescent career development. *The Career Development Quarterly*, *72*(3), 241–257. <https://doi.org/10.1002/cdq.12344>
- Dankyi, L. A., Minadzi, V. M., Segbenya, M., Agyei, P. M., & Dankyi, J. K. (2024). Examining stakeholders' perception of sixty-six years of guidance service delivery in Ghana. *Cogent Social Sciences*, *10*(1), 2337900. <https://doi.org/10.1080/23311886.2024.2337900>
- Mensah Agyei, P., Segbenya, M., Dankyi, L. A., & Minadzi, V. M. (2025). Exploring the interplay between guidance services and career success: Unveiling the key determinants. *PLOS ONE*, *20*(7), e0314200. <https://doi.org/10.1371/journal.pone.0314200>