Exploring Associations Between Holland's Personality Types and Productive Language Skills Among Iranian EFL Learners: A Pilot Study

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Article Info	ABSTRACT

This exploratory pilot study examined associations between Holland's RIASEC personality types and productive language skills among 104 Iranian EFL learners across three proficiency levels. Participants completed the Oxford Quick Placement Test, IELTS Mock Test, and Holland's Vocational Typology Test. Due to small and unequal sample sizes (ranging from $n = 0$ to $n = 15$), traditional inferential statistics were underpowered. Descriptive statistics and effect size calculations revealed modest variations: Artistic and Social types showed numerically higher speaking scores at lower proficiency, while Enterprising learners demonstrated stronger writing performance at higher proficiency. However, effect sizes were generally small to negligible ($\eta^2 = .01–.15$), suggesting limited practical associations. These preliminary findings indicate Holland's personality framework may have minimal explanatory power for L2 productive skills, though the study's exploratory nature and limited sample preclude definitive conclusions.

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Introduction

English language proficiency has gained considerable prominence in Iran over recent decades, establishing itself as the primary foreign language in educational contexts. Within the broader domain of second language acquisition (SLA), individual differences (IDs) have emerged as critical factors influencing communicative competence and serving as potential predictors of language proficiency outcomes (Dörnyei, 2005; Ellis, 2008). Despite their theoretical importance, ID variables—particularly personality traits—remain understudied in Iranian educational settings, where pedagogical approaches often overlook learner characteristics in favor of standardized methodologies.

Among ID variables, personality represents perhaps the most fundamental aspect of human individuality. As Pervin and John noted, "personality is the area of psychology that focuses on understanding people as whole individuals with complexities" (Pervin & John, 2001: 3). Yet personality's role in SLA presents a paradox: while it constitutes a core element of learner identity, its influence on language learning appears less pronounced than factors such as motivation, aptitude, or learning strategies (Dörnyei, 2005). This apparent disconnect between personality's theoretical centrality and its measured effects has resulted in relatively limited research attention compared to other ID variables.

Historical trends support this characterization. Furnham documented a scarcity of academic research examining connections between personality and first language use (Furnham, 1990). A decade later, Dewaele and Furnham confirmed this research gap persisted, attributing it partly to the divergent methodological traditions of linguistics and psychology (Dewaele & Furnham, 2000). Within existing personality research in SLA, the extraversion-introversion dimension has received disproportionate attention, likely due to its relative ease of measurement and its intuitive connection to oral language production (Furnham, 1990). Studies have suggested that introverts tend toward more formal language use, greater grammatical precision, and increased pause frequency in speech compared to extroverts (Dewaele & Furnham, 1999; Dewaele & Furnham, 2000).

More recently, researchers have begun investigating relationships between proficiency levels and personality configurations. Dewaele and Furnham explored connections between personality type and speaking performance (Dewaele & Furnham, 1999), while Cumming characterized writing as "a personal expression by means of which the writer's unique voice is reflected" (Cumming, 2006: 473), and Winterowd emphasized writing's individualistic nature (Winterowd, 1975). These perspectives suggest that productive skills—requiring active language generation rather than passive comprehension—may be particularly susceptible to personality influences.

Rationale and Research Question

Despite these theoretical connections, a critical gap exists regarding whether and how personality types relate to productive skills across different proficiency levels in EFL contexts. This relationship remains particularly underexplored in Iranian settings and when examined through Holland's vocational personality framework (Holland, 1997), which offers a distinct theoretical lens compared to the more commonly studied Big Five or Myers-Briggs models.

This pilot study addresses this gap by exploring the following research question: *To what extent do Holland's personality types (Realistic, Investigative, Artistic, Social, Enterprising, Conventional) relate to speaking and writing proficiency among low-, mid-, and high-proficiency Iranian EFL learners?* Given the exploratory nature of this investigation and the limitations inherent in pilot research, we focus on describing patterns and estimating effect sizes rather than testing definitive hypotheses. This approach aligns with recommendations for exploratory research in complex domains where prior effect sizes are unknown (Cumming, 2014).

Significance and Study Aims

This pilot study addresses several important needs in SLA research. First, it extends personality research beyond the commonly studied Big Five and Myers-Briggs frameworks to Holland's vocational typology, which emphasizes interest patterns and behavioral tendencies that may relate distinctly to language learning contexts. Second, it examines productive skills specifically—an area where personality effects might manifest more clearly than in receptive skills, given the increased demands for active performance, self-expression, and interpersonal interaction.

Third, by conducting research in an authentic Iranian EFL context, the study provides ecologically valid data from an underrepresented population in SLA research. The findings can inform several stakeholder groups: educators may gain insights into learner diversity that could inform differentiated instruction; researchers may identify promising directions for larger-scale investigations; and materials developers may consider how personality-aware design might support diverse learner profiles.

Importantly, this study embraces its role as exploratory pilot research. Rather than claiming definitive answers, it aims to (a) generate preliminary descriptive data on personality-proficiency patterns, (b) estimate effect sizes to inform power analyses for future studies, (c) identify methodological challenges in this research domain, and (d) refine research questions and hypotheses for subsequent investigations. As McPherson suggested, understanding learner personality profiles enables educators to design more responsive instructional environments (McPherson, 1999), though the precise mechanisms and effect magnitudes require empirical investigation—a gap this pilot study begins to address.

A brief note of previous works

Research examining personality's role in language learning spans multiple theoretical frameworks and methodological approaches. Early work by Smith and colleagues suggested personality might influence not only learners' attitudes toward second language acquisition but also their effectiveness in self-directed learning environments, highlighting the potential for personality-informed pedagogical approaches (Smith, Irey, & McCaulley, 1973). However, subsequent research has produced mixed and sometimes contradictory findings regarding personality's actual impact on language learning outcomes.

The extraversion-introversion dimension has dominated personality research in SLA, particularly regarding oral production. Dewaele and Furnham investigated personality-speaking relationships in bilingual contexts, finding that extroverted bilinguals exhibited greater fluency, especially in stressful

interpersonal communication situations (Dewaele & Furnham, 1999). This finding aligns with theoretical expectations that extraversion—characterized by sociability, assertiveness, and comfort in social situations—would facilitate speaking performance through increased practice opportunities and reduced anxiety.

However, research has also documented advantages for introverts. Studies suggest introverted learners tend to use more formal language, demonstrate greater grammatical precision, and employ more strategic pausing in speech—characteristics that may reflect deeper processing and greater attention to accuracy (Furnham, 1990). Badran examined extraversion-introversion in relation to English pronunciation accuracy among EFL learners, finding a positive correlation between extraversion and pronunciation accuracy, with extroverts outperforming introverts (Badran, 2002). Interestingly, this study also revealed small gender effects, with males showing slightly superior pronunciation accuracy compared to females. More comprehensive personality frameworks have yielded nuanced findings. Ehrman and Oxford conducted an extensive investigation at the U.S. Department of State, examining relationships among cognitive aptitude, learning strategies, learning styles, personality traits, motivation, anxiety, and speaking proficiency (Ehrman & Oxford, 1995). While cognitive aptitude emerged as the strongest predictor, the Myers-Briggs Type Indicator (MBTI) showed weak but statistically significant correlations with speaking proficiency. This pattern suggests personality effects exist but may be overshadowed by other variables.

Apple investigated Big Five personality traits in relation to foreign language speaking confidence among Japanese EFL students (Apple, 2011). His findings revealed that emotional stability and openness to experience directly influenced speaking confidence, which comprised three components: speaking anxiety, perceived self-competence, and willingness to speak English. Importantly, Apple found that classroom environment perceptions and the perceived social value of speaking English also impacted confidence, suggesting personality effects operate within broader contextual systems.

Kelsen and Liang examined Big Five traits and motivation as predictors of collaborative presentation performance, finding advantages for extroverts while emphasizing the importance of conscientiousness-related traits (perseverance, effort) in research-intensive projects (Kelsen & Liang, 2018). Their work suggests different personality dimensions may be relevant for different task types.

More recently, research has explored motivation-personality interactions. Razavi and Salehi examined online group learning effects on English learning motivation among Iranian university students, finding significant improvements in L2 learning experience but identifying technology barriers as demotivating factors (Razavi & Salehi, 2019). Fathi and colleagues investigated willingness to communicate in relation to ideal L2 self, foreign language enjoyment, and intercultural communicative competence, revealing complex mediation patterns that highlight how personality-like constructs interact with motivational and affective variables (Fathi & Hejazi, 2023; Fathi et al., 2023).

Writing has received less research attention than speaking in personality studies, despite theoretical arguments for strong personality-writing connections. Cumming characterized writing as fundamentally

personal expression (Cumming, 2006: 473), while Winterowd emphasized writing's individualistic nature (Winterowd, 1975). Fast and Funder argued that writing serves as a window into individual differences in vocabulary use and sentence structure, suggesting personality might manifest in both content and style (Fast & Funder, 2008).

Empirical findings have been mixed. Farrokhi and Nourelahi examined MBTI-measured personality in relation to three writing genres (narrative, descriptive, argumentative), finding significant associations for argumentative and descriptive writing but not narrative writing (Farrokhi & Nourelahi, 2015). Gender showed no significant influence on writing performance. Jafarpour and colleagues investigated introversion-extraversion effects on Iranian EFL learners' writing, finding that introverts outperformed extroverts across most dimensions (language use, content, vocabulary, mechanics) except organization (Jafarpour, Boroujeni, & Roohani, 2015). The authors attributed this to introverts' characteristic attention to detail and careful processing.

Sutrisno and colleagues explored cooperative learning techniques and personality types as factors in English essay writing, concluding that tailoring learning techniques to students' personalities could enhance writing skills (Sutrisno, Rasyid, & Rahmat, 2018). However, the specific mechanisms and effect sizes remained unclear.

While most SLA personality research employs the Big Five or MBTI frameworks, Holland's vocational personality theory offers an alternative lens (Holland, 1997). Holland's RIASEC model categorizes individuals into six types based on interests and behavioral tendencies: Realistic (practical, hands-on), Investigative (analytical, intellectual), Artistic (creative, expressive), Social (helpful, interpersonal), Enterprising (persuasive, leadership-oriented), and Conventional (organized, detail-oriented). These types have been extensively validated in career counseling and educational contexts but remain largely unexplored in SLA research.

Holland's framework may offer unique insights for language learning research. The Artistic type's emphasis on creativity and self-expression suggests potential advantages in writing and creative language use. The Social type's interpersonal orientation aligns theoretically with speaking proficiency requirements. The Investigative type's analytical tendencies might relate to metalinguistic awareness and grammatical precision. However, empirical investigation of these theoretical connections in language learning contexts remains limited.

Theoretical framework

Review of existing literature reveals several gaps that justify the present exploratory investigation. First, most personality-SLA research has focused on extraversion-introversion or Big Five models, leaving Holland's framework unexplored despite its theoretical relevance and wide application in educational settings. Second, research specifically examining personality across multiple proficiency levels remains limited, though proficiency might moderate personality effects. Third, simultaneous examination of both speaking and writing in relation to personality is rare, preventing comparative analysis of personality effects across productive skills.

Additionally, much existing research has been conducted in Western contexts, with Iranian EFL populations underrepresented. Given cultural factors' potential influence on both personality expression and language learning, context-specific research is needed.

Finally, existing studies have often reported inconsistent findings and small effects, suggesting either that personality effects are genuinely weak or that methodological issues (small samples, inadequate power, measurement problems) have obscured true relationships. This pattern underscores the value of pilot research that can estimate effects, identify methodological challenges, and inform future investigations.

This study addresses these gaps through an exploratory investigation of Holland's personality types in relation to speaking and writing proficiency across three proficiency levels in an Iranian EFL context. By embracing an exploratory approach with appropriate analytical methods (descriptive statistics, effect size estimation) rather than overinterpreting underpowered significance tests, the study aims to generate preliminary insights while acknowledging inherent limitations.

Method

Research Design

This study employed an exploratory, cross-sectional design examining associations between Holland's personality types and productive language skills (speaking and writing) among Iranian EFL learners at three proficiency levels. We characterize this investigation as pilot research given its primary aims: (a) generating preliminary descriptive data on personality-proficiency relationships in this population, (b) estimating effect sizes to inform power analyses for future studies, (c) identifying methodological considerations for larger-scale research, and (d) refining research questions and measurement approaches. The study collected quantitative data through standardized assessments of language proficiency and personality type. Rather than employing inferential statistics to test predetermined hypotheses—an approach that would be inappropriate given sample size limitations (discussed below)—we focused on descriptive statistics, visual data representation, and effect size estimation to identify preliminary patterns worthy of future investigation.

Participants

Participants were 104 Iranian EFL learners recruited from three institutions in Kashan, Iran (population approximately 300,000): Kashan Medical Science University, Islamic Azad University (Kashan Branch), and Danesh Bartar Language Institute. Recruitment occurred during 2022 through convenience sampling, with participants volunteering after being informed about study procedures. Inclusion criteria specified (a) intermediate-level English proficiency based on prior institutional placement, (b) age 18–35 years, (c) current enrollment in or recent completion of English language courses, and (d) willingness to complete all assessment procedures.

The participant pool included both males and females majoring in various academic disciplines. Nearly all had studied English in Iranian secondary schools and language institutes, representing typical

Iranian EFL learner profiles. Initial screening of 150 learners using the Oxford Quick Placement Test (OQPT) yielded 104 participants meeting intermediate proficiency criteria.

Based on OQPT scores, participants were divided into three proficiency bands within the intermediate range: low-intermediate ($n = 33$), mid-intermediate ($n = 31$), and high-intermediate ($n = 40$). This division enabled examination of personality-proficiency relationships across proficiency levels while maintaining a relatively homogeneous overall sample in terms of general English ability. Table 1 presents the distribution.

Instruments

The OQPT (Allen, 2004) served as the initial proficiency screening instrument. This standardized, 60-item, multiple-choice assessment evaluates general English proficiency across grammar and vocabulary domains. The test comprises two parts and requires approximately 60 minutes to complete. We selected the OQPT for its established reliability, practical administration, and widespread use in EFL contexts for placement purposes. Scores enabled classification of participants into low-, mid-, and high-intermediate proficiency levels.

We administered authentic IELTS General Training test materials under standardized exam conditions to assess productive skills. The IELTS was selected for its international recognition, comprehensive skill assessment, and established validity as a measure of L2 proficiency (British Council, 2020).

The **speaking** module consisted of three parts administered in individual interviews lasting approximately 15 minutes per participant: Part 1 (introduction and interview, 4–5 minutes), Part 2 (individual long turn, 3–4 minutes including 1 minute preparation), and Part 3 (two-way discussion, 4–5 minutes). Interviews were conducted by trained raters and audio-recorded for subsequent scoring. Speaking performance was rated on a 9-point scale following official IELTS criteria (fluency and coherence, lexical resource, grammatical range and accuracy, pronunciation).

The **writing** module required participants to complete two tasks within 60 minutes: Task 1 (letter writing, minimum 150 words, 20 minutes) and Task 2 (essay writing, minimum 250 words, 40 minutes). Responses were scored by trained raters on a 9-point scale following official IELTS criteria (task achievement, coherence and cohesion, lexical resource, grammatical range and accuracy).

Both speaking and writing scores were averaged across tasks and components to yield single composite scores (0–9) for each skill. Inter-rater reliability was established through double-rating of 20% of responses, yielding acceptable agreement (ICC = .82 for speaking, .79 for writing).

Holland's personality assessment classifies individuals into six personality types based on interests, preferences, and behavioral tendencies (Holland, 1997). The instrument contains 108 items across four sections: activities participants enjoy, competencies they possess, occupations of interest, and self-assessments of abilities. Participants respond to each item by indicating their interest or agreement. Scoring procedures assign individuals to one of six RIASEC types based on highest aggregate scores:

- **Realistic (R)**: Preference for practical, hands-on activities; mechanical and athletic interests

- **Investigative (I)**: Preference for analytical, intellectual activities; scientific and mathematical interests

- **Artistic (A)**: Preference for creative, expressive activities; artistic and literary interests

- **Social (S)**: Preference for helping and interpersonal activities; teaching and counseling interests

- **Enterprising (E)**: Preference for persuasive and leadership activities; business and sales interests

- **Conventional (C)**: Preference for organized, detail-oriented activities; clerical and administrative interests

Holland's instrument has demonstrated acceptable reliability and validity across numerous studies and cultural contexts (Holland, 1997). Morris provided evidence that self-reported personality inventories like Holland's can reliably assess interpersonal behavior patterns and emotional tendencies when properly administered (Morris, 1979). For this study, participants were classified into one of the six types based on their highest domain score, consistent with Holland's recommended procedures.

Procedure

Data collection occurred in two phases over approximately six months. All procedures received approval from relevant institutional review boards, and participants provided informed consent prior to participation.

Phase 1: Proficiency Assessment. Initial screening employed the OQPT to verify intermediate-level proficiency and enable classification into proficiency subgroups. The test was administered in paper-and-pencil format under standardized conditions (60 minutes, quiet testing environment, proctored administration). Of 150 initial participants, 104 met intermediate-level criteria and were retained for subsequent assessment.

Phase 2: IELTS Mock Testing. Participants completed the IELTS General Training Mock Test under official exam conditions. The Listening, Reading, and Writing modules were administered consecutively on the same day, requiring approximately 3 hours total. The Speaking module was conducted individually within one week of the written modules, with each interview lasting approximately 15 minutes (including warm-up). All speaking performances were audio-recorded with participant permission. Participants were informed that (a) performance would be scored according to official IELTS criteria, (b) results would be provided to them as feedback, and (c) recordings would be used solely for research purposes and kept confidential.

For the present study, only Speaking and Writing scores were analyzed, as these represent the productive skills of primary theoretical interest. Listening and Reading data were collected but are not reported here, as the theoretical rationale for personality effects is less compelling for receptive skills, and the already small sample sizes would be further strained by additional analyses.

Phase 3: Personality Assessment. Following proficiency testing, participants completed Holland's Vocational Typology Test in a single session lasting approximately 45 minutes. The instrument was

administered in paper-and-pencil format with instructions translated into Persian to ensure comprehension. Participants were encouraged to respond honestly and informed that there were no "correct" answers. Completed assessments were scored according to Holland's procedures, with each participant assigned to one of the six RIASEC types based on highest domain scores.

Data Analysis

As detailed in the Results section, participant distribution across personality types within proficiency levels resulted in highly unequal and small cell sizes, with some groups containing zero, one, or two participants (see Tables 2 and 4). Under these conditions, traditional inferential statistics (ANOVA, Kruskal-Wallis tests) lack adequate statistical power and produce unreliable results. Specifically: (1) Statistical power for detecting even large effects ($d = 0.8$) is less than .20 with groups of $n < 5$, well below acceptable standards (.80); (2) Assumption violations are severe: homogeneity of variance cannot be established, and rank-based tests require meaningful sample sizes within each group; (3) Type II error probability approaches 1.0, meaning non-significant results are uninformative—they reflect inadequate power rather than true null effects; (4) Multiple comparisons across six personality types and three proficiency levels (18 cells) with minimal data per cell exacerbate these issues.

Consequently, we abandoned hypothesis testing in favor of an exploratory descriptive approach consistent with pilot study methodology (Leon, Davis, & Kraemer, 2011). Our analytical strategy prioritized: (a) descriptive statistics (means, standard deviations, ranges) to characterize performance patterns; (b) effect size estimation (eta-squared) to quantify the proportion of variance in productive skills associated with personality type, acknowledging wide confidence intervals due to small samples; (c) visual data representation (bar charts) to facilitate pattern recognition; (d) transparent reporting of sample sizes and distributions to enable reader evaluation; and (e) cautious interpretation emphasizing preliminary patterns rather than definitive conclusions.

This approach aligns with methodological recommendations for exploratory research (Cumming, 2014) and pilot studies (Leon et al., 2011), which emphasize estimation over testing and transparency over overgeneralization.

For each productive skill (speaking, writing) and proficiency level (low, mid, high), we calculated: (1) group means and standard deviations for each personality type; (2) overall means across all personality types within each proficiency level; (3) eta-squared (η^2) as a measure of effect size, calculated as the between-groups sum of squares divided by total sum of squares, interpretable as the proportion of variance in skill scores associated with personality type (small: $\eta^2 = .01$, medium: $\eta^2 = .06$, large: $\eta^2 = .14$; Cohen, 1988); and (4) visual representations via bar charts displaying mean scores for each personality type within each proficiency level.

All analyses were conducted using SPSS 24.0. Although we initially computed Kruskal-Wallis tests as planned in the original design, we do not report these results as primary findings due to the statistical power concerns described above. Instead, we present descriptive patterns and effect sizes, with full acknowledgment of the limitations this imposes on generalizability.

Results

Preliminary Considerations

Participant distribution across personality types within proficiency levels revealed substantial imbalances that fundamentally constrained analytical possibilities. Tables 2 and 4 present complete distributions, which reveal groups ranging from $n = 0$ (Mid-proficiency Conventional) to $n = 15$ (Social learners across all three proficiency levels). This extreme variability meant that traditional comparative statistics were underpowered and potentially misleading. Accordingly, the following results emphasize descriptive patterns and effect size estimates, with appropriate cautions regarding interpretation.

Speaking Performance

Table 2 presents descriptive statistics for speaking scores across personality types and proficiency levels. Among low-proficiency learners ($n = 31$), mean speaking scores ranged from 2.66 (Realistic) to 4.10 (Artistic). Artistic and Social learners obtained the highest scores ($M = 4.10$ and 3.86, respectively), while Realistic and Enterprising learners scored lowest ($M = 2.66$ and 2.87). However, the small sample sizes for most personality types ($n = 1$ to 5) limit confidence in these patterns. The effect size for personality type differences was small ($\eta^2 = .08$), suggesting personality type accounted for approximately 8% of variance in speaking scores among low-proficiency learners. However, with small and unequal group sizes, this estimate has wide confidence intervals and should be interpreted cautiously.

Mid-proficiency learners ($n = 33$) showed more restricted score ranges, with means spanning 5.08 (Investigative) to 6.00 (Realistic). Notably, the single Realistic learner scored highest ($M = 6.00$), while no Conventional learners appeared in this proficiency band. The narrow range of mean differences (less than one point on a 9-point scale) and the absence of Conventional learners for comparison suggest minimal personality-related variation at this proficiency level. Effect size was negligible ($\eta^2 = .02$), indicating personality type accounted for only 2% of speaking score variance.

High-proficiency learners ($n = 40$) demonstrated relatively homogeneous performance, with means clustering tightly around 7.00 (range: 6.60 to 7.30). Enterprising learners obtained the highest mean ($M = 7.30$), followed closely by Realistic ($M = 7.12$), Social ($M = 7.03$), and Conventional ($M = 7.00$) types. Investigative and Artistic learners scored slightly lower ($M = 6.93$ and 6.60, respectively), but these differences were modest. Effect size was minimal ($\eta^2 = .01$), suggesting personality type accounted for only 1% of variance in speaking scores among high-proficiency learners.

Across proficiency levels, speaking performance showed limited association with personality type. The largest effect emerged among low-proficiency learners ($\eta^2 = .08$), though even this small effect must be interpreted cautiously given unequal and minimal group sizes. At higher proficiency levels, personality type appeared nearly irrelevant, accounting for 2% or less of score variance. While some numerical differences exist (particularly at low proficiency), the overall impression is one of similarity rather than meaningful differentiation by personality type.

The Social personality type, which theoretically might benefit from interpersonal orientation in speaking contexts, showed no consistent advantage. Similarly, Artistic learners—who might be expected to excel in expressive language use—demonstrated no clear pattern of superior speaking performance. These descriptive patterns suggest personality type, at least as operationalized through Holland's framework, bears minimal relationship to L2 speaking ability in this sample.

Writing Performance

Table 4 presents descriptive statistics for writing scores across personality types and proficiency levels. Among low-proficiency learners (n = 31), writing scores ranged from 3.00 (Realistic) to 3.75 (Enterprising). Enterprising learners obtained the highest mean score, followed by Artistic learners (M = 3.60). However, all means fell within a narrow 0.75-point range on the 9-point scale, suggesting modest variation. Effect size was minimal (η^2 = .02), indicating personality type accounted for only 2% of writing score variance among low-proficiency learners.

Mid-proficiency learners (n = 33) showed writing means ranging from 4.87 (Enterprising) to 5.66 (Artistic), with most types scoring near 5.00. The Artistic type's numerically higher mean and Enterprising type's lower mean are notable but based on small sample sizes (n = 3 and n = 8, respectively). As with speaking, no Conventional learners appeared in this proficiency band. Effect size was small (η^2 = .03), suggesting personality type accounted for approximately 3% of writing score variance.

High-proficiency learners (n = 40) demonstrated writing means ranging from 6.50 to 7.00. Artistic and Enterprising learners both achieved the highest means (M = 7.00), followed closely by Social learners (M = 6.86). Realistic, Investigative, and Conventional learners all scored at 6.50. The 0.5-point range represents minimal variation on a 9-point scale. Effect size was negligible (η^2 = .01), indicating personality type accounted for only 1% of writing score variance among high-proficiency learners.

Similar to speaking, writing performance showed limited association with personality type across proficiency levels. Effect sizes ranged from η^2 = .01 to .03, indicating personality type accounted for between 1% and 3% of writing score variance—small by conventional standards. The Artistic personality type, which might theoretically benefit from creative and expressive tendencies in writing contexts, showed no consistent advantage. Similarly, Enterprising learners—who might excel in persuasive communication—demonstrated no clear pattern of superior writing ability.

Within each proficiency level, different personality types cluster closely together, suggesting more similarity than difference. At low proficiency, all types scored between 3.00 and 3.75; at mid proficiency, between 4.87 and 5.66; and at high proficiency, between 6.50 and 7.00. These narrow ranges, coupled with small effect sizes, suggest personality type—as measured by Holland's framework—bears minimal relationship to L2 writing ability in this sample.

Integrative Summary

Across both productive skills and all three proficiency levels, Holland's personality types showed minimal association with language performance. Of the six effect sizes calculated (three per skill), all fell in the

small-to-negligible range (η^2 = .01 to .08). The largest effects emerged among low-proficiency speakers (η^2 = .08) and mid-proficiency writers (η^2 = .03), but even these small effects are questionable given the unequal group sizes and must be replicated with adequate samples before drawing conclusions.

Theoretical expectations that certain personality types would demonstrate clear advantages in productive skills received limited support. Social learners did not consistently outperform others in speaking despite their presumed interpersonal orientation. Artistic learners showed no definitive advantage in writing despite their supposed creative proclivities. These null patterns suggest either (a) Holland's personality framework lacks relevance for L2 productive skills, (b) personality effects are genuinely minimal in this domain, or (c) methodological limitations (small samples, measurement issues, restricted proficiency range) obscured true relationships. The present pilot study cannot definitively adjudicate among these possibilities but provides preliminary evidence favoring the first two interpretations.

Discussion

This exploratory pilot study examined potential associations between Holland's RIASEC personality types and productive language skills (speaking and writing) among Iranian EFL learners across three proficiency levels. Given substantial sample size limitations—with personality type groups ranging from $n = 0$ to $n = 15$ and many cells containing fewer than five participants—we employed descriptive statistics and effect size estimation rather than inferential hypothesis testing. The results revealed consistently small-to-negligible effect sizes (η^2 = .01 to .08), suggesting minimal practical associations between personality type and productive skill performance in this sample.

The finding of minimal personality-proficiency associations warrants careful interpretation. The most parsimonious interpretation holds that Holland's personality types genuinely bear minimal relationship to L2 productive skills. This conclusion aligns with Dörnyei's characterization of personality as less influential than aptitude, motivation, or strategies in language learning contexts (Dörnyei, 2005). Unlike these variables—which directly target cognitive processing, engagement, or learning behaviors—personality traits reflect general behavioral tendencies that may not translate directly to language-specific performance.

This interpretation finds support in several aspects of the data. First, effect sizes were consistently small across both skills and all proficiency levels, suggesting a systematic pattern rather than random variation. Second, theoretically plausible personality-skill matches (e.g., Social types in speaking, Artistic types in writing) failed to materialize consistently. Third, the restricted variance in performance at higher proficiency levels (where all personality types scored between 6.50 and 7.30) suggests that as learners advance, individual differences in personality become increasingly irrelevant compared to accumulated skill and knowledge.

From this perspective, the minimal effects observed here may accurately reflect personality's limited role in language learning, at least as captured by Holland's framework. This would align with Ehrman and Oxford's finding of weak correlations between MBTI types and speaking proficiency (Ehrman &

Oxford, 1995) and Adelifar and colleagues' finding of no significant personality-speaking relationships (Adelifar, Jafarzadeh, Abbasnejhad, & Hasani, 2016).

Alternatively, the null findings may reflect limitations specific to Holland's RIASEC model rather than personality's general irrelevance. Holland's framework was developed for vocational counseling contexts, emphasizing interest patterns and career preferences rather than cognitive-affective traits most relevant to language learning (Holland, 1997). The Big Five model, which includes dimensions like conscientiousness (related to learning effort), emotional stability (related to anxiety), and openness (related to cognitive flexibility), may capture personality variance more relevant to language learning than Holland's interest-based typology.

Existing research provides mixed support for this interpretation. Apple found that emotional stability and openness—Big Five dimensions—directly influenced foreign language speaking confidence (Apple, 2011). Kelsen and Liang identified conscientiousness-related traits as important for language learning tasks (Kelsen & Liang, 2018). These findings suggest certain personality dimensions may indeed relate to language learning, but perhaps not those captured by Holland's model.

However, even Big Five research has produced modest effects. Oz found correlations between personality and willingness to communicate but not necessarily with proficiency per se (Oz, 2014). This pattern suggests personality may influence language learning behaviors (practice, risk-taking, persistence) more than outcomes (proficiency), implying complex mediation pathways rather than direct effects.

The present study's methodological limitations may have obscured true personality-proficiency relationships. Most notably, the small and unequal sample sizes across personality types severely constrained our ability to detect effects, even if present. Statistical power analyses indicate that detecting a medium effect ($d = 0.5$) with six groups of $n = 5$ requires total $N \approx 300$ for power = .80—nearly triple our achieved sample. Consequently, even if personality exerts moderate effects, this study lacked adequate power to detect them reliably.

Additionally, several measurement issues may have attenuated observed relationships. First, restricting the sample to intermediate-level learners (to maintain relative homogeneity) simultaneously restricted proficiency variance, reducing the potential for personality-proficiency correlations to manifest. Including a broader proficiency range—from beginners to advanced learners—might reveal stronger associations. Second, the IELTS speaking and writing assessments, while well-validated measures of communicative proficiency, may not capture personality-relevant dimensions (e.g., creativity in language use, interpersonal warmth in speaking) as sensitively as targeted measures might. Third, assigning participants to single personality types, while consistent with Holland's methodology, oversimplifies personality's dimensional nature and may obscure effects that emerge for specific trait combinations.

Cultural factors may also play a role. Holland's model, developed in Western contexts, may function differently in Iranian cultural settings where social norms, educational practices, and communication

styles differ. Personality expression itself varies culturally, meaning that "Social" or "Enterprising" types may manifest differently in Iranian versus Western contexts.

The present findings both align with and diverge from prior research, revealing the complexity of personality-language relationships. Our finding of minimal personality effects on speaking performance echoes Adelifar and colleagues, who reported no significant personality-speaking relationships across gender groups (Adelifar et al., 2016), and Yusef-Hasirchin, who concluded that personality traits were weak predictors of speaking fluency (Yusef-Hasirchin, 2014). These null findings contrast with Dewaele and Furnham's earlier work showing extraversion advantages for bilingual fluency (Dewaele & Furnham, 1999) and Badran's finding of extraversion-pronunciation accuracy correlations (Badran, 2002).

However, Oz found that extraversion, agreeableness, and openness correlated with willingness to communicate rather than proficiency per se (Oz, 2014), suggesting personality may influence speaking-related behaviors more than abilities. Our Social personality type (theoretically analogous to extraversion/agreeableness) showed no consistent speaking advantage, supporting the interpretation that personality-speaking relationships are weak or mediated by other variables.

Barekat and Tabatabaei's identification of conscientiousness as a predictor of speaking ability (Barekat & Tabatabaei, 2013) finds partial parallel in our data: Enterprising and Conventional types (sharing conscientiousness-like traits) performed adequately at high proficiency, though not consistently across levels. Similarly, Takaè and Poºega's positive conscientiousness-speaking correlation (Takaè & Poºega, 2011) receives modest support from our Enterprising learners' strong high-proficiency performance ($M = 7.30$), though the small sample ($n = 5$) limits confidence.

Writing results showed similarly minimal personality associations, aligning with some prior research but contradicting other findings. Our results partially contrast with Farrokhi and Nourelahi, who found significant personality-writing relationships for argumentative and descriptive genres (Farrokhi & Nourelahi, 2015). However, their focus on genre-specific writing and use of the MBTI makes direct comparison difficult. The absence of narrative writing effects in their study suggests task type may moderate personality-writing relationships—a possibility our study could not examine given the use of standardized IELTS tasks.

Jafarpour and colleagues reported that introverted learners outperformed extroverts in writing mechanics, vocabulary, and content (Jafarpour et al., 2015)—findings our Investigative and Artistic types (potentially analogous to introversion) did not clearly replicate. However, their study examined introversion-extraversion specifically rather than Holland's types, again complicating direct comparison. The superior performance of Artistic and Enterprising learners in high-proficiency writing ($M = 7.00$ for both) aligns theoretically with Cumming's characterization of writing as personal expression (Cumming, 2006: 473) and Winterowd's emphasis on individuality (Winterowd, 1975). Yet the small effect size ($\eta^2 = .01$) suggests these numerical differences have minimal practical significance.

Sutrisno and colleagues' conclusion that tailoring instruction to personality types improves writing skills (Sutrisno et al., 2018) implies stronger personality effects than we observed. This discrepancy may

reflect differences in instructional contexts (their study involved personality-matched pedagogies) versus our correlational design examining existing proficiency levels.

The minimal personality-proficiency associations observed here carry several theoretical implications for understanding individual differences in SLA. First, the findings suggest that personality—at least as captured by Holland's framework—may be less central to language proficiency outcomes than other ID variables. This aligns with hierarchical models of learner characteristics (Dörnyei, 2005) that position aptitude and motivation as more proximal predictors of achievement while treating personality as a more distal factor influencing learning behaviors and contexts rather than proficiency directly.

Second, the results underscore the complexity of ID research in SLA. The inconsistent findings across studies examining personality-language relationships likely reflect genuine complexity—including moderation by proficiency level, task type, cultural context, and pedagogical environment—rather than simple measurement error. Future research should embrace this complexity through designs that examine moderators and mediators explicitly rather than seeking direct personality-proficiency correlations.

Third, the findings highlight the importance of framework selection in personality research. Holland's vocational typology, while valuable for career counseling, may lack sensitivity to cognitive-affective dimensions most relevant for language learning. Future research might productively focus on Big Five dimensions or learning-specific personality constructs (e.g., tolerance of ambiguity, need for cognition) rather than vocational interest patterns.

Despite the minimal effects observed, the study offers several practical insights for EFL educators and program designers. First, the findings suggest that personality type should not be prioritized as a major consideration in EFL pedagogy or placement decisions. Given that personality accounted for only 1–8% of productive skill variance, other factors—aptitude, motivation, prior learning experience, instructional quality—deserve greater attention when designing curricula, forming classes, or predicting learner success.

Second, the relatively homogeneous performance across personality types at each proficiency level suggests that effective instruction can support diverse learner profiles. Educators need not dramatically differentiate approaches based on personality type but should focus on evidence-based pedagogies effective across learner populations.

Third, while personality may have minimal impact on proficiency outcomes, it might still influence learning processes, preferences, and affective experiences. Teachers might productively consider personality when designing classroom activities to maximize engagement and comfort—for instance, providing options for individual versus group work, creative versus analytical tasks, and structured versus open-ended assignments—even if such accommodations don't dramatically impact proficiency outcomes. Fourth, the absence of strong personality effects should reassure learners across personality types that language proficiency is achievable regardless of whether one identifies as introverted or extroverted, artistic or conventional. This may be particularly valuable for learners who self-identify as personality types stereotypically viewed as disadvantageous for language learning.

This pilot study faced several significant limitations that constrain interpretation and generalizability while offering important methodological lessons for future research. The most fundamental limitation concerns inadequate sample sizes within personality type groups. With cells ranging from $n = 0$ to $n = 15$ and many containing fewer than five participants, the study lacked statistical power to detect even medium-sized effects reliably. This limitation emerged from the intersection of two factors: (a) relatively small total sample ($N = 104$) and (b) unequal distribution of participants across six personality types, with Social type substantially overrepresented ($n = 45$ across proficiency levels) while other types were underrepresented (Conventional $n = 4$, Realistic $n = 8$).

Future research should employ substantially larger samples—ideally $N \geq 300$—to ensure adequate representation across personality types. Alternatively, researchers might oversample underrepresented types or focus analyses on personality dimensions (e.g., People-focused vs. Task-focused) rather than discrete types, increasing cell sizes and power.

Limiting the sample to intermediate-level learners (to maintain homogeneity) simultaneously restricted variance in proficiency, potentially attenuating personality-proficiency correlations. The decision to further subdivide this intermediate sample into three proficiency bands (low-, mid-, high-intermediate) addressed reviewer concerns about comparing learners at different levels but exacerbated power problems by spreading already-limited participants across multiple comparison groups. Future research might more productively compare learners spanning a broader proficiency range (beginner through advanced) using continuous proficiency measures rather than categorical groups, maximizing variance and avoiding arbitrary cut-points.

Relying solely on Holland's vocational typology, while appropriate given our research question, may have limited sensitivity to personality dimensions most relevant for language learning. The RIASEC framework emphasizes interest patterns and vocational preferences rather than cognitive styles, emotional regulation, or learning-relevant traits. Future research should consider multi-framework approaches, assessing personality through both Holland's model and the Big Five or other learning-relevant constructs, enabling examination of which personality dimensions (if any) relate most strongly to language proficiency.

The cross-sectional design prevents causal inference and cannot address how personality might influence learning trajectories over time. Personality may exert effects on learning processes (practice behaviors, strategy use, persistence through difficulty) that accumulate to influence proficiency but aren't captured in single-point assessments. Longitudinal designs tracking learners over months or years would enable examination of personality's role in learning trajectories, revealing whether certain types show steeper improvement curves, differential responses to instruction, or varying persistence even if eventual proficiency levels converge.

Conducting research in a single cultural context (Iran) with a specific population (intermediate EFL learners in Kashan) limits generalizability. Personality expression varies culturally, as do language learning contexts, pedagogical approaches, and assessment practices. What constitutes "Social" or

"Enterprising" behavior may differ across cultures, potentially explaining null findings. Cross-cultural research designs examining personality-proficiency relationships across diverse contexts would address this limitation, revealing whether patterns observed here reflect universal minimal effects or context-specific phenomena.

Conclusion

This exploratory pilot study investigated associations between Holland's RIASEC personality types and productive language skills among 104 Iranian EFL learners across three proficiency levels. Employing descriptive statistics and effect size estimation—appropriate methods given severe sample size limitations and unequal group distributions—the study yielded consistently small-to-negligible effect sizes (η^2 = .01 to .08) across all analyses. While several interpretations remain plausible—including genuine minimal effects, framework-specific limitations, and methodological constraints that obscured true relationships—the data most parsimoniously support the conclusion that personality type, at least as operationalized through Holland's vocational framework, plays a limited role in determining productive skill proficiency.

For practitioners, the minimal personality effects observed suggest that personality type should not be prioritized in pedagogical decision-making, placement, or proficiency prediction, with educators instead focusing on factors with stronger empirical support. Future research should address this study's limitations through larger samples ensuring adequate representation across personality types ($N \geq 300$), broader proficiency ranges to maximize variance, multiple personality frameworks to enhance construct coverage, longitudinal designs to examine learning trajectories, and cross-cultural replications to assess generalizability. In embracing its status as exploratory pilot research—with transparent reporting of limitations, appropriate analytical methods, and cautious interpretation—this study contributes foundational descriptive data and methodological insights to an underexplored area of SLA research while honestly acknowledging that definitive answers require substantially more robust investigation.

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Tables

Table 1. Participant Distribution Across Proficiency Levels

Proficiency level	n
Low-intermediate	33
Mid-intermediate	31
High-intermediate	40
Total	104

Table 2. Speaking Scores Across Personality Types and Proficiency Levels

Personality type	Low-proficiency		Mid-proficiency		High-proficiency	
	n	M	n	M	n	M
Realistic	3	2.6	1	6.00	4	7.12
Investigative	3	3.0	6	5.08	8	6.93
Artistic	5	4.0	3	5.66	5	6.60
Social	15	3.6	15	5.50	15	7.03
Enterprising	4	2.7	8	5.12	5	7.30
Conventional	1	3.0	0	---	3	7.00
Overall	31	3.1	33	5.36	40	7.00

Note. M = mean speaking score on 9-point IELTS scale..

Table 3. Effect Sizes for Speaking Performance Across Proficiency Levels

Proficiency level	η^2
Low-intermediate	.08
Mid-intermediate	.02
High-intermediate	.01

Note. η^2 = eta-squared effect size.

Table 4. *Writing Scores Across Personality Types and Proficiency Levels*

Personality type	Low-proficiency		Mid-proficiency		High-proficiency	
	n	M	n	M	n	M
Realistic	3	3.00	1	5.50	4	6.50
Investigative	3	3.16	6	5.08	8	6.50
Artistic	5	3.60	3	5.66	5	7.00
Social	15	3.40	15	5.00	15	6.86
Enterprising	4	3.75	8	4.87	5	7.00

Conventional	1	3.50	0		3	6.50
Overall	31	3.41	33	5.06	40	6.76

Note. M = mean writing score on 9-point IELTS scale.

Table 5. Effect Sizes for Writing Performance Across Proficiency Levels

Proficiency level	η^2
Low-intermediate	.02
Mid-intermediate	.03
High-intermediate	.01

Note. η^2 = eta-squared effect size.