Strategy Use, Cultural Intelligence, and English Language Proficiency of Undergraduate Saudi Students

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Abstract
The study attempted to explore Saudi English learners’ second language proficiency and how it is possibly related to language learning strategies and cultural intelligence. Research questions addressed the variables of language proficiency, cultural intelligence, strategy use, gender, and educational school background. It is hoped that more insights into the interplay between these factors and successful language learning will benefit language learners, teachers, and policymakers. The study collected data from 180 Saudi first-year undergraduates majoring in English. The data was analyzed using inferential statistics to investigate the relationship among the study variables. The results revealed that the study participants scored a medium level in both language learning strategies and cultural intelligence. Metacognitive and cognitive strategies were the most frequently used, and affective strategies were the least frequently used. No significant differences were found in strategy use when related to English language proficiency, gender, or school background. However, a significant effect was observed between language level and cultural intelligence, specifically on metacognitive, and behavioral subsections. Another positive correlation was reported between strategy use and cultural intelligence, especially with the metacognitive subsections. Pedagogical implications are presented as the study argues for the benefits of direct instruction on cultural awareness and strategy use in language classrooms.

Keywords: Language learning strategies, strategy use, Cultural Intelligence, English language proficiency, Saudi students

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Introduction

Of the many factors affecting language learning, the role of learners’ individual characteristics has generated much interest among researchers. The interest lies in what Dörnyei and Skehan (2003) have termed “the correlation challenge” describing individual differences between language learners as “potential predictors of second language learning success” (p. 589). Among those individual factors, Language Learning Strategies (LLS) have been investigated extensively, with findings indicating their importance in enhancing language learning (Griffiths, 2004). Twenty years ago, LLS research received much critique and competition, yet Griffiths (2019) asserts that it is still “a fertile area of research and publication” (p. 610). Recent research worldwide is still investigating LLS with a broad range of factors that might interact and affect the language learning process (Alhaisony, 2017; Alrashidi, 2022; Bećirović, Brdarević-Čeljo, & Polz, 2021; Bruen, 2020; Dahmash, 2023; Huang, 2018; Javid, Al-Kuwaiti, Uthman, Karbakhsh, & Safa, 2020; Lee & Heinz, 2016; Liyanage & Bartlett, 2012; Ma & Abdul Samat, 2022; Radwan, 2022; Sadeghi & Soleimani, 2016; Sahragard, Khajavi, & Abbasian, 2016; Taheri, Sadighi, Bagheri, & Bavali, 2019; Tai & Zhao, 2022; Tang & Tian, 2015; Tezcan & Deneme, 2016).

The theoretical underpinning of LLS incorporates cognitive and sociocultural views allowing the exploration of a wide range of related concepts (Griffiths, 2019). In particular, the idea of culture has been identified as closely associated with language and to the point that Oxford and Gkonou (2018) described the three factors as being “interwoven”, forming “a grand tapestry” (p. 403). Yet they note that there is an imbalance in language learning studies regarding the cultural factor. One of the well-developed L2 acquisition frameworks in this regard is Gardner’s (1985) social-educational model, which emphasizes the role of cultural beliefs of individual learners. Realizing the importance of social-cultural awareness and globalization, Earley and Ang (2003) developed the concept and an instrument to evaluate cultural intelligence (CQ) based on the theories of intelligence (Livermore, 2011; Sternberg, 1986). Thus, studies on LLS would benefit from further explorations of the cultural factor, more precisely, what has been defined as an individual’s cultural intelligence.

Much research has been conducted on LLS and language proficiency across cultures. Liu and Rao (2023) argued for a strong correlation between cultural practices and strategy use. However, less attention has been paid to the link between, cultural awareness, and language proficiency. An original study by Rachmawaty, Wello, Akil, and Dollah (2018) explored these variables among college students in Indonesia. Their results reported significance between using LLS and cultural intelligence, but not with language proficiency. They recommended further investigations into strategy use and cultural backgrounds.

Recent studies on LLS in the Saudi context have investigated strategy use, gender, and proficiency (Alrashidi, 2022; Alhaison, 2012; Alhaisony, 2017; Javid et al., 2013; Dahmash, 2023). Alnufaie (2022) observed a growing body of research on strategy instruction in the Saudi context, recommending more investigations into other variables that interact with language learning strategies. Many researchers also called for more studies into learners’
individual variables and cultural beliefs (Alhaisoni, 2013; Alsashidi, 2022). Yet to the best of my knowledge, no study has investigated the variables mentioned above in the Saudi context.

Accordingly, examining English language proficiency, LLS, and cultural intelligence will shed light on an area that yet remains underexplored. Such knowledge would have pedagogical implications by identifying aspects that lead to successful language learning. The study aimed at uncovering the individual characteristics of the language learners of this study in relation to their success in language learning by answering the following research questions:

1. What are the levels of strategy use, cultural intelligence, and language proficiency of Saudi college-level students in this study?
2. What are the differences in strategy use and cultural intelligence related to gender or school educational backgrounds (public, private, or international schools)?
3. What is the relationship between English language proficiency, and the variables of cultural intelligence and strategy use?
4. Is there a correlation between the subcategories of the strategy inventory and the cultural intelligence scale?

The remainder of this paper is structured as follows: First, the literature review provides the theoretical and empirical backgrounds of the different concepts involved. Then the methodology outlines the design of the study describing participants, procedure, instruments, and data analysis. This is followed by the presentation and discussion of the results noting their relevance and implications. The main aim and outcomes of this investigation are summarized in the conclusion.

Literature Review

Language Learning Strategies

Researchers initially explored LLS to identify characteristics that distinguish people who are good at language learning (Rubin, 1975; Stern, 1975). Studies named LLS as an important tool that could be used with other techniques to enhance learning in the language classroom (Griffiths, 2004). Oxford (1990) defined LLS as steps made by the learner to improve learning’s ease, speed, effectiveness, and adaptability. Cohen (2011) added that those actions are “consciously selected by learners, to assist them in learning and using language in general, and in the completion of specific language tasks.” (p. 682).

A widely used division of language learning strategies is the one proposed by Oxford (1990), which identified six strategies: cognitive, metacognitive, memory, compensation, affective, and social. Oxford (2003) explained that cognitive and memory strategies relate to cognitive processes like identifying, grouping, storing, and retrieving, while compensation strategies involve guessing and compensating for missing knowledge to sustain communication. Metacognitive strategies deal with how learners plan, identify and organize their learning process. Finally, effective strategies are those actions that tap into the person’s feelings, anxiety, and self-assurance, while social strategies are those related to how a learner seeks verification, help, or conversations...
with others. This classification divides strategies according to function, while there are other categorizations based on strategy use or skill area (Cohen, 2011).

In the past decade, investigations into LLS continued globally with different groups of language learners across different cultures. Most studies used Oxford’s (1990) Strategy Inventory of Language Learning (SILL) which is described by Ellis (1994) as the most comprehensive instrument in this line of research. LLS was explored in China (Liu & Rao, 2023; Ma & Abdul Samat, 2022; Tang & Tian, 2015; Zou & Supinda, 2022), Hong Kong (Tai & Zhao, 2022), Taiwan (Huang, 2018), Malaysia (Muniandy & Shuib, 2016), Iran (Karbakhsh & Safa, 2020; Sadeghi & Soleimani, 2016; Taheri et al., 2019), and Turkey (Tezcan & Deneme, 2016). The scope of those studies included different contextual and individual factors, but a recurring finding is a positive correlation between language proficiency and strategy use.

The possible link between strategies and language proficiency was investigated in different pedagogical contexts. For example, Zou and Supinda (2022) related strategy use and development in language proficiency among Chinese students in Thailand in a cross-cultural educational context, and Ma and Abdul Samat (2022) with Chinese undergraduate students in flipped English classrooms. Tai and Zhao (2022) focused on factors that predict success in university-level English language proficiency by comparing secondary school background, motivation, and language learning strategies. Their results showed that previous school instruction was not relevant and that motivation and the use of LLS were linked to increased language proficiency. Huang (2018) used a grounded theory approach to investigate strategy use in a learning context. The findings suggest varied strategies between individuals in response to different contexts. Moreover, Tezcan and Deneme (2016) investigated LLS among 8th-grade school EFL learners in Turkey. Their findings indicated that females use strategies more widely, but unlike other studies, there was no correlation between strategy use and achievement.

Other studies focused on factors related to the learners themselves, such as learners’ beliefs (Tang & Tian, 2015), perceptual styles (Muniandy & Shuib, 2016), goal orientation and self-efficacy (Karbakhsh & Safa, 2020), characteristics of shyness and anxiety (Sadeghi & Soleimani, 2016), and cognitive and emotional intelligence (Taheri et al., 2019). Positive correlations were established between most factors investigated, language achievement, and LLS.

Many studies were also conducted on LLS in the Arab world (Al-Buainain, 2010; Khalil, 2005; Radwan, 2022; Riazi, 2007). Earlier studies such as Khalil (2005), Riazi (2007), and Al-Buainain (2010) looked at the strategies used by L1 Arabic students in EFL settings. Khalil’s (2005) study showed a correlation between strategy use, language proficiency, and gender among Palestinian students, while Riazi (2007) and Al-Buainain (2010) found no significant correlation with students from Qatar. Recently, Radwan (2022) looked at strategy use and learners’ beliefs and uncovered a positive correlation between motivation, expectations, and language aptitude with most subcategories of strategies similar to Tang and Tian’s (2015) study. This study recommended incorporating strategy instruction for a more successful language learning experience.
Many researchers investigated LLS in the Saudi context. Javid et al. (2013) explored the strategy use and proficiency of 240 undergraduate students majoring in English at Taif University, and their results revealed a positive correlation. Alhaisoni (2012) also reported positive correlations among 701 undergraduate students at Hail University but recorded overall low to medium strategy use. There was no significant effect of the gender variable on the overall results except for the slightly more frequent use of social strategies. On the other hand, Alhaisony’s (2017) study on 134 students of Aljouf University showed a significant difference in favor of females. Overall strategy use was low to medium, with no correlation with the duration of language studies. More recently, Dahmash (2023) examined the strategy use of 145 female students in three universities and reported medium to high use with no correlation with language level. She recommended that further research explore other factors “such as age, gender, nationality, belief, learning style, linguistic proficiency, motivation, culture, curriculum design, and educational system.” (p.38). All in all, most studies in the Saudi context established positive correlations and recommended further investigations of strategy use by looking at more variables and factors, which is the aim of this current study.

**Language learning, culture, and intelligence**

Boulding (2000) defines culture as attributes that a group of people shares regarding history, attitudes, practices, etc. Culture could also refer to the people who share those attributes in a specific place or without boundaries due to migration and globalization (Oxford & Gkonou, 2018). Early and Ang (2003) define cultural intelligence CQ as “a person’s capability to adapt effectively to new cultural contexts” (p.58). This type of intelligence shares the main characteristics of other types of intelligence with a focus on the skills that make people more effective in globalized, culturally diverse contexts (Livermore, 2011).

Ang, Van Dyne, and Koh (2006) created the cultural intelligence scale (CQS) to understand why some people perform better in multicultural environments. The scale subsections include a) Metacognitive CQ, which involves higher-order mental processes of understanding and control; b) Cognitive CQ, which reflects acquired knowledge of practices and systems within different cultures; c) Motivational CQ, which means the ability to function and channel energy and attention to cross-cultural situations, and finally d) Behavioral CQ, which reflects the ability to perform appropriately in cross-cultural interactions. CQS was investigated in different disciplines, including cross-cultural applied linguistics, as it offered a valid measure to assess an individual’s cultural intelligence (Ng, Van Dyne, & Ang, 2012).

Gardner’s (1985) social-educational model incorporates social and cultural variables with language acquisition. Gardner and MacIntyre (1993) argued that social integrativeness with other groups plays a significant role in second language learning. They called for the refinement of measurements to look at how these variables interact with proficiency. Researchers recommended developing cultural awareness in language learning classrooms (Genc & Bada, 2005; Scarino, 2009; Thanasoulos 2001). Scarino (2009) and related this to globalization and global citizenship,
which has affected all aspects of life. Ismailov (2021) asserted that improving the intra-cultural awareness of Japanese undergraduate students enhanced their intercultural communication and their engagement in the learning process. Nguyen (2017) recommended using instruments to collect data and track language learners’ cultural perceptions. Alyeksyeyeva, Chaiuk, Kovalchuk, and Galitska (2022) believe that advanced L2 learners would benefit from direct instruction to improve their intercultural awareness of the second language culture. They examined Ukrainian master’s students’ interpretation of L2 English texts and observed that the lack of cultural awareness increased miscomprehension and slowed down development in the second language.

However, in the literature, there are a few studies that explored cultural intelligence (Ang et al., 2006) among language learners. One of the few studies was conducted by Wujiabudula and Karatepe (2020) who investigated Turkish ELT teachers’ and students’ cultural intelligence CQ. They stated that there was a significant link between language proficiency and metacognitive, motivational, and behavioral subsections, but not with cognitive intelligence. Another study in Turkey was Karadag’s (2020) study examining 86 university students, and findings revealed that although participants’ cultural intelligence was at a medium level, a significant positive correlation with language proficiency was found. Contrary to Karadag’s (2020) study, Rachmawaty et al. (2018) found no relationship between English language proficiency and CQ among Indonesian language learners. However, their investigation confirmed a significant correlation between CQ and LLS, and they recommended further investigations to verify the results. Therefore, more research into these variables is needed to effectively evaluate the function of cultural intelligence in the language learning process.

Methodology

The study aims to identify the connection between strategy use, cultural intelligence, and English language proficiency of Saudi undergraduate students while considering the effect of two variables: gender and school background. To achieve the objectives, quantitative data was collected through three main instruments: a language proficiency test, the strategy inventory SILL (Oxford, 1990), and the cultural intelligence scale CQS (Ang et al., 2006). This research design is widely used in studies on LLS and its relationship to language achievement and other variables (e.g. Al-Buainain, 2010; Alhaisoni, 2012; Alhaisony, 2017; Bečirović et al., 2021; Dahmash, 2023; Javid et al., 2013; Muniandy & Shuib, 2016; Radwan, 2022; Riazi, 2007; Tai & Zhao, 2022; Tang & Tian, 2015) and also in studies of cultural awareness and intelligence and its relationship to language learning (Karadag, 2020; Rachmawaty et al., 2018).

Participants

The study comprised a convenience sample of 180 college-level Saudi students (111 females and 69 males) enrolled in the first year at the English department, at King Saud University KSU, after studying their school years at either public, private, or international schools.
Instruments and data collection

The instruments of the study were distributed in the academic year (2019-2020) among students willing to participate in their classrooms with help from their teachers. At first, more than 200 responses were collected, but incomplete ones were excluded. Participants first answered a question on the first page asking if they attended public, private, or international schools. Then they took a 40-item cloze test (from Slabakova, 2000) to measure language proficiency as it is a valid measure of overall proficiency (Jonz, 1990). The Arabic-translated 50-item version of the Strategy Inventory of Language Learning SILL (Oxford, 1990) was used. The strategies assessed by the SILL are cognitive, metacognitive, memory, compensation, affective, and social strategies. The final instrument was Ang et al.’s (2006) Cultural Intelligence Scale CQS which included 20 items looking at four subcategories of cultural intelligence: cognitive, metacognitive, motivational, and behavioral. The assessment on both the SILL and CQS followed a 5-point Likert scale. Following Oxford’s (1990) division of mean scores, the results of the two questionnaires were divided into three levels: High (a mean of 3.5–5.0), Medium (a mean of 2.5–3.4), and Low (a mean of 1.0–2.4).

Data Analysis

The participants were categorized into three proficiency groups (elementary, intermediate, and advanced) based on the results of the proficiency test. Each subcategory of SILL and CQ was given a descriptive mean score. Then, an independent-sample t-test was conducted to identify the correlation between gender, CQ, and LLS. A one-way ANOVA examined the relationship between school background, CQ, and LLS. Another one-way ANOVA was carried out to find if there are significant relationships between CQ, LLS, and English language proficiency groups. Finally, correlations were performed on the subsections of SILL and CQS.

Research Procedure

The instruments were printed as hard copies and handed to participants who were willing to fill them out and participate in the study. The data was collected from the first year of study at the English department by visiting different classes in both the girls’ and the boys’ campuses over the course of two weeks. Participation was voluntary and no grades were involved.

Results

Table one shows the distribution of participants based on their gender and school background. The highest percentage of participants in this study came from government schools 57.78%, followed by private schools 38.33%, and finally, only 3.89% from international schools. Most of the participants are at an elementary English level proficiency 57.22%, while 28.89% are intermediate, and 13.89% are advanced.
Table 1: Distribution of participants’ gender, school background, and proficiency

<table>
<thead>
<tr>
<th>Gender</th>
<th>School Background</th>
<th>Language Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>male</td>
<td>female</td>
</tr>
<tr>
<td>n</td>
<td>69</td>
<td>111</td>
</tr>
<tr>
<td>%</td>
<td>38.33</td>
<td>61.66</td>
</tr>
</tbody>
</table>

Frequencies and percentages were calculated to show the levels of strategy use and cultural intelligence of Saudi college-level students in this study. The level of most of the students’ strategy use ranged quite evenly between medium (46%) to high (47%) with only 6.11% reporting low strategy use. The level of cultural intelligence ranged between medium (54%) to high (36.65%), but more students were at the medium level, as shown in Table two.

An independent-samples T-test was performed to answer RQ two on the difference in strategy use and cultural intelligence between students based on gender. There was no significant effect for gender on the SILL, \( t = 0.61, p = 0.54 \), as females (\( M =3.38, SD=0.57 \)) and males (\( M = 3.42, SD=0.58 \)) attained similar mean scores. Moreover, the T-test was conducted on all six subsections based on gender, and no significance was found. No significant difference was reported for gender on the CQS as well, \( t = 0.98, p= 0.3 \), although females scored a slightly lower average (\( M=3.19, SD=0.56 \)) when compared to males (\( M=3.30, SD=0.77 \)).

Regarding school backgrounds (coming from public, private, or international schools), results of the overall SILL showed almost equal averages from students coming from the government (\( M=3.40, SD= 0.58 \)) and private (\( M=3.40, SD= 0.55 \)) schools with a slightly lower average by students from international schools (\( M=3.21, SD=0.71 \)). A different similarity was revealed by the results of the CQS with students from private schools (\( M=3.32, SD=0.72 \)) and international schools (\( M=3.32, SD=0.93 \)) with a slightly lower average from government schools (\( M=3.17, SD=0.58 \)). A one-way ANOVA was performed to assess if this difference based on their school backgrounds is statistically significant. The ANOVA showed no significant difference for the SILL (\( F= 0.308, p= 0.73 \)), and the CQS (\( F=1.02, p=0.36 \)). Another finding with the breakdown of results based on school background was that students from government schools and private schools reported the same tendency in the use of strategies ordered as follows from most frequent to least:1) Metacognitive, 2) Compensation, 3) Cognitive, 4) Social, 5) Memory, and 6) Affective.
This was also found with their results on CQS subsections in the following order: 1) Motivational, 2) Metacognitive, 3) Behavioral, and 4) Cognitive. The results of students from international schools differed with SILL in the order of use as the highest strategies were social, metacognitive strategies came third, and similarly, affective strategies were ranked lowest. Their results on the CQS were also different, with the metacognitive intelligence scoring the highest average rather than the motivational intelligence.

Table 3: ANOVA between SILL, CQS, and Proficiency Level

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Language Learning Strategies</th>
<th>Cultural Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td>Memory</td>
<td>0.427</td>
<td>0.653</td>
</tr>
<tr>
<td>Cognitive</td>
<td>1.690</td>
<td>0.187</td>
</tr>
<tr>
<td>Compensation</td>
<td>1.322</td>
<td>0.269</td>
</tr>
<tr>
<td>Metacognitive</td>
<td>0.470</td>
<td>0.626</td>
</tr>
<tr>
<td>Affective</td>
<td>4.580</td>
<td>0.012*</td>
</tr>
<tr>
<td>Social</td>
<td>0.098</td>
<td>0.907</td>
</tr>
<tr>
<td>Total</td>
<td>0.499</td>
<td>0.608</td>
</tr>
</tbody>
</table>

*The mean difference is significant at the 0.05 level.

To answer RQ three, a one-way ANOVA was conducted between SILL and CQS results in relation to language proficiency. The results in Table three above indicate that cultural intelligence results are significantly different across levels of language proficiency ($F=8.024, p=0.001$). The results on the CQS subcategories showed a significant relationship between language proficiency and the two intelligence subsections: metacognitive ($F=16.249, p=0.001$) and behavioral ($F=5.035, p=0.007$).

Table four below shows that the mean score of metacognitive intelligence increased with language proficiency, starting with ($M=3.09, SD=0.81$) for the elementary group, ($M=3.58, SD=0.88$) for the intermediate group, reaching ($M=4.04, SD=0.68$) with the advanced group. Mean scores of behavioral intelligence also increased with language proficiency from elementary ($M=2.96, SD=0.79$), to intermediate ($M=3.28, SD=0.92$), and advanced ($M=3.47, SD=0.88$). The results indicated that the three proficiency groups’ mean scores on the CQS were indeed linked to proficiency, with the advanced group scoring the highest total ($M=3.59, SD=0.45$), followed by the intermediate group ($M=3.35, SD=0.73$), then the elementary group ($M=3.09, SD=0.61$). The results of the advanced and intermediate groups were similar in the order of CQS subsections from highest to lowest: 1) Metacognitive, 2) Motivational, 3) Behavioral, then 4) Cognitive. The order of subsections with the elementary group was different, with motivational intelligence being the highest ranking and cognitive and behavioral the lowest.
Table 4: Descriptive Statistics of CQS Based on Proficiency Level

<table>
<thead>
<tr>
<th>Intelligence</th>
<th>Advanced Group</th>
<th>Intermediate Group</th>
<th>Elementary Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognitive</td>
<td>4.04</td>
<td>0.68</td>
<td>2.75</td>
</tr>
<tr>
<td>Cognitive</td>
<td>3.24</td>
<td>0.64</td>
<td>1.67</td>
</tr>
<tr>
<td>Motivational</td>
<td>3.77</td>
<td>0.84</td>
<td>2.60</td>
</tr>
<tr>
<td>Behavioral</td>
<td>3.47</td>
<td>0.88</td>
<td>2.20</td>
</tr>
<tr>
<td>Total</td>
<td>3.59</td>
<td>0.45</td>
<td>2.85</td>
</tr>
</tbody>
</table>

On the other hand, the ANOVA in Table three above shows that total LLS results were not significantly different across levels of language proficiency ($F= 0.499$, $p=0.608$). The only significance was between affective strategies and language proficiency ($F= 4.580$, $p=0.012$). The results were further analyzed to show the participants’ use of LLS in the six subcategories in relation to their language proficiency. Table five below shows that the three proficiency groups’ mean scores on overall strategy use were at similar levels: elementary (M= 3.37, SD= 0.56), Intermediate (M=3.46, SD=0.62), and advanced (M=3.35, SD=0.52). The subsection of affective strategies with the advanced learners received the lowest mean score of all other subcategories among all groups (M=2.58, SD=0.84). The mean score of the intermediate group was higher (M=3.05, SD=0.76), and the elementary group was the highest (M=3.11, SD=0.78). This means that participants of this study used affective strategies less frequently with the progress of their language proficiency. As to the order of frequency in strategy use, results showed that cognitive strategies were at the top, followed by metacognitive strategies for the advanced group. The intermediate and elementary groups were different, with metacognitive strategies first, then compensation strategies.

Table 5: Descriptive Statistics of SILL Based on Proficiency Level

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Advanced Group</th>
<th>Intermediate Group</th>
<th>Elementary Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>3.18</td>
<td>0.67</td>
<td>2.11</td>
</tr>
<tr>
<td>Cognitive</td>
<td>3.57</td>
<td>0.59</td>
<td>2.21</td>
</tr>
<tr>
<td>Compensation</td>
<td>3.53</td>
<td>0.67</td>
<td>2.00</td>
</tr>
<tr>
<td>Metacognitive</td>
<td>3.55</td>
<td>0.86</td>
<td>1.89</td>
</tr>
<tr>
<td>Affective</td>
<td>2.58</td>
<td>0.84</td>
<td>1.00</td>
</tr>
<tr>
<td>Social</td>
<td>3.41</td>
<td>0.97</td>
<td>1.83</td>
</tr>
</tbody>
</table>
Pearson correlations were conducted between the six subsections of SILL and the four subsections of CQS (Table 6), to answer the final research question. The results confirmed a significant positive correlation between all subsections of SILL and subsections of CQS except for affective strategies. Affective strategies had a positive but insignificant correlation with metacognitive ($p=0.085$) and motivational intelligences ($p=0.065$).

Table 6: Correlation between SILL and CQ

<table>
<thead>
<tr>
<th>SILL</th>
<th>Metacognitive</th>
<th>Cognitive</th>
<th>Motivational</th>
<th>Behavioral</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>0.320</td>
<td>0.000</td>
<td>0.243</td>
<td>0.001</td>
<td>0.200</td>
</tr>
<tr>
<td>Cognitive</td>
<td>0.390</td>
<td>0.000</td>
<td>0.345</td>
<td>0.000</td>
<td>0.306</td>
</tr>
<tr>
<td>Compensation</td>
<td>0.399</td>
<td>0.000</td>
<td>0.326</td>
<td>0.000</td>
<td>0.293</td>
</tr>
<tr>
<td>Metacognitive</td>
<td>0.306</td>
<td>0.000</td>
<td>0.205</td>
<td>0.006</td>
<td>0.336</td>
</tr>
<tr>
<td>Affective</td>
<td>0.129</td>
<td>0.085</td>
<td>0.197</td>
<td>0.008</td>
<td>0.138</td>
</tr>
<tr>
<td>Social</td>
<td>0.277</td>
<td>0.000</td>
<td>0.226</td>
<td>0.002</td>
<td>0.266</td>
</tr>
<tr>
<td>Total</td>
<td>0.395</td>
<td>0.000</td>
<td>0.330</td>
<td>0.000</td>
<td>0.331</td>
</tr>
</tbody>
</table>

Discussion

The results showed that the use of LLS (M=3.3) and the level of CQ (M= 3.2) among the Saudi college-level students of this study were at a similar average level of medium. The language proficiency of most of the participants ranged between elementary (57.22%) and intermediate (28.98%) with a small percentage of advanced-level students (13.89%). The independent-sample T-test revealed that overall strategy use and cultural intelligence scores were not significantly different between males and females nor between students from different school backgrounds. Students from public and private schools were similar in their preference for strategies and the order of cultural intelligence scores while students from international schools reported different results. A significant result was established between language proficiency and the two cultural intelligence subsections: metacognitive and behavioral. As to language learning strategies, the only significance was indicated in the low use of affective strategies among students with advanced language proficiency levels. Finally, the results showed a significant positive correlation between all subsections of the two instruments SILL and CQS except for effective strategies.
These results are in line with many other studies on LLS (Alhaisoni, 2012; Alhaisony, 2017; Dahmash, 2023; Ma & Abdul Samat, 2022; Zou & Supinda, 2022) and CQS (Karadag, 2020; Rachmawatyet al., 2018). This could be because most participants were at the elementary level (57%). Contrary to many previous studies, this study found no effect of gender or school background on strategy use or the results of the CQS. The decreasing effect of school background on the development of English language proficiency at the university level was similar to the findings of Tai and Zhao (2022) on students in Hong Kong. It is also very promising given the fact that the Saudi government schools were under improvement in the past two decades to catch up with private and international schools and earlier studies such as Aburizaizahet al. (2016) noted that graduates at that time did not reflect that because the improvements haven’t been fully implemented.

The significant relationship between language proficiency and cultural intelligence confirms the findings of Karadag (2020) linking cultural intelligence to language proficiency, and more specifically, the findings of Wujiabudula and Karatepe (2020), and Rachmawatyet al. (2018) specifying the significance of metacognitive, behavioral, and motivational intelligences. In addition, the participants’ descriptive results whether grouped according to proficiency or school background showed that metacognitive and motivational intelligences are the most dominant of the four subsections of cultural intelligence. The findings also support Rachmawaty et al.’s (2018) observation that cultural intelligence or awareness could play a role in determining strategy type and rate of occurrence. Rachmawatyet al. (2018) further explain that metacognitive intelligence is crucial because it induces critical thinking when differences in culture arise, allowing learners to evaluate their understanding. This process is believed to raise cultural awareness when learning a foreign language and could help in the choice and frequency of LLS. On the other hand, motivational intelligence is connected to learners' beliefs about their abilities leading them to use specific strategies. As to behavioural intelligence, it is defined as the changes in linguistic or non-linguistic behavior when communicating with other cultures through travel and exposure (Karadag, 2020; Keung, 2011). Exposure could also occur through social media, especially by younger generations of Saudi EFL learners who were described by Haque and Al Salem (2019) as being highly engaged with social media with positive attitudes and beliefs.

Unlike the findings of Javid et al. (2013) and Alhaisoni (2012), English language proficiency was not related to strategy use, which is consistent with more recent findings of Alhaisony (2017). This might be caused by the discrepancy in the number of students in each proficiency group. On the other hand, this study supports Oxford’s (1990) claim that the use of types of LLS is influenced by culture. The findings indicate that metacognitive and cognitive strategies were ranked as being the highest used strategies linked to proficiency. This finding agrees with Tai & Zhao’s (2022) results indicating that the use of cognitive and metacognitive strategies predicted higher success in English learning among university students in Hong Kong. Conversely, studies on other cultures named other types as being the most used, such as social strategies in China (Ma & Abdul Samat, 2022), compensation strategies in Thailand (Zou &
Supinda, 2022), and affective strategies in Turkey (Tezcan & Deneme, 2016). Additionally, the results are consistent with other studies on the Saudi context, noting that metacognitive and cognitive strategies had the highest frequency while affective strategies had the lowest frequency among Saudi language learners (Alhaisoni, 2012; Alhaisony, 2017; Dahmash, 2023; Javidet al., 2013). The frequent use of metacognitive strategies could be explained by the learning environment, which is very demanding and intensive since it is linked to professional advancement (Al-Buainain, 2010, Dahmash, 2023). Previous studies suggested that affective strategies were the least used, and this was attributed to students’ anxiousness, fear of making mistakes, and refusal to reflect on their feelings (Alhaisony, 2017; Bečirović et al., 2021; Dahmash, 2023; Javidet al., 2013). This study also showed a significant decrease in the use of effective strategies as participants advanced in their proficiency, which might mean that they needed them less as they became more proficient in the second language. Bečirović et al. (2021) offered a similar explanation of affective strategies noting that Bosnian high school students of their study have spent years studying English formally in schools and “are now at higher stages of language learning and have made considerable progress towards L2 proficiency and thus do not need these strategies as much as they needed them in their initial stages.” (p.103).

All in all, most previous research on language learners investigated LLS and cultural awareness separately. Following the recommendations of a few recent studies, this investigation brought together those concepts to identify connections in relation to success in language learning. The results revealed that male and female students from all school backgrounds with higher cultural intelligence scores were more advanced in language proficiency. Also, most students had medium to high averages on LLS which means that those strategies are adopted by language learners at all levels. The crucial finding was the significant positive correlation between LLS and cultural intelligence. Accordingly, language learning institutions and teachers would benefit from including tasks and activities to raise students’ cultural awareness and increase their cultural intelligence. Implementing such practices along with direct strategy instruction carries the potential to improve the language learning process.

**Conclusion**

The study aimed at looking into the relationship between Saudi students’ English language proficiency, their use of language learning strategies, and their level of cultural intelligence. Significant results found between cultural intelligence and language proficiency confirm the importance of investigating the relationship between cultural factors and language learning as set forth by the aims of this study. Therefore, it is recommended to raise cultural awareness in language classrooms in Saudi Arabia. Further studies are needed to verify the possible link between LLS and language proficiency to overcome the limitations of this study by increasing the number of participants with an even distribution in each proficiency group, or by conducting longitudinal studies that track the progress of language learning. There was also a positive correlation between the two instruments: the SILL and CQS and the metacognitive subsection was
the highest used in both. This indicates the importance of the metacognitive factor, which needs further investigation on ways to incorporate it in classroom instruction. Results of previous studies on LLS in the Saudi context and worldwide are consistent with this study’s findings in the order and frequency of types of strategies, with affective strategies being the least used. Hence, more refined strategy instruction based on research findings is needed to enhance the use of strategies and revise them based on students’ needs and preferences.

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