
| RESEARCH ARTICLE

Applied Linguistics Research Articles in Saudi Arabia: A Content Analysis

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| ABSTRACT

This study aims at investigating applied linguistics research articles (ALPRAs) in the Kingdom of Saudi Arabia (KSA) that were published during 2004 – 2022. More precisely, it sought to reveal those articles' distribution, topics they covered, research methods they adopted, data collection instruments, sample members and size, and data analysis techniques they followed. An article classification form (ACF) was adopted to analyze 455 ALPRAs, which were collected through a purposive sample. Results showed that most research articles were published during 2019 – 2022, language teaching and learning/teaching methods were the most AL investigated topics during this period, the quantitative approach dominated the ALPRAs in KSA, and questionnaires were the prevailing data collection tools. Moreover, undergraduates whose numbers ranged between 31 – 100 and 101 – 300 were the sample members and the sample size adopted in ALPRAs. The study recommended that well-designed research method courses are needed to be provided by English Departments in Saudi Universities.

| KEYWORDS

Applied linguistics research; Content analysis; Research; Research methods; Quantitative research; Qualitative research

| ARTICLE INFORMATION

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1. Introduction

English language (EL) is considered a global language as it is taught as a second language (SL) or a foreign language (FL) all over the world at all educational stages. This is due to social and cultural reasons, according to Crystal (2003) and other reasons, such as the British colonization and information exchange (Harmer, 2007). In addition, Graddo (2006, cited in Harmer, 2007) points out that the number of people speaking English will increase by 2040. In KSA, the teaching of EL dates to the beginning of the last century (Elyas & Pica, 2019; Al-Seghayer, 2014). However, formal teaching in secondary schools started in 1936 to prepare Saudi students to study outside KSA. Then EL enjoyed a prominent status in the Saudi educational system (Elyas & Pica, 2019). This position "resulted from the development of KSA in a variety of ways" (Al-Seghayer, 2014, p.17). These ways cover educational growth, economic development, and oil discovery. This situation caused the teaching of EL at all educational levels in KSA.

In Saudi higher education, EL is taught in the Preparatory Year Program (PYP) as a general subject and in English Departments in the 30 Saudi public universities as a specialization. These departments award the degree of BA in English language, English language and English literature, or English language and translation. The faculty members at these departments are both Saudi natives and foreign professors from all over the world recruited by the Ministry of Education (MoE), which supervises the universities in KSA.

The Saudi MoE prioritizes scientific research. This is evident in several ways. First, it sends the Saudi staff abroad to study for their Master's and Ph.D. in almost all specializations, including English language, translation, English literature, and general and applied linguistics. This is because scientific research is regarded as an integral part of the "scientific and cultural development of universities in KSA" (M o E, 2019). Statistics show that in the academic year 2016-2017, 236 Saudi students were registered for Masters' and 129 for Ph.D. in languages. In the same year, 265 students graduated with Masters' and 69 with Ph.D. in languages

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including English (M o E, 2018). Second, it established the Deanships of Scientific Research (DSR) in all public universities. These Deanships supervise scientific research conducted by the university faculty members. They have a variety of responsibilities. For example, one of the tasks of the DSR at Prince Sattam Bin Abdulaziz University (PSAU) is to “encourage faculty members and other researchers to undertake innovative scientific research” (DSR, PSAU, 2019). Third, these DSRs fund scientific research conducted by university staff in all fields, including applied linguistics.

Thus, ELT and its research enjoy high priority, and the attention paid to applied linguistic research in KSA is evident and obvious in the establishment of DSRs in all Saudi public universities. This situation implies that a huge amount of money is spent annually on ELT and its research in KSA. However, so far, two studies have been conducted to investigate the status and quality of applied linguistics PRAs in Saudi Arabia. To be specific, these studies were by Alzumor (2014) and Alsowat (2017). Alzumor’s study was limited to AL research conducted at King Khalid University by its faculty members. Moreover, it was not concerned with research methods, data collection and analysis. Additionally, the sample size was relatively small. The second study, Alsowat’s, focused only on the teaching of English language skills to identify the contribution of research to the teaching of language skills in KSA. The study did not cater for instrumentation and data analysis procedures. This is what the current study seeks to cater for. Thus, the purpose of this study is to analyze AL PRAs in KSA (2004 -2022) in terms of distribution to the years 2004 - 2022, topics covered, research design adopted, data collection tools employed, sample members and size and data analysis procedures applied. Given the gap in research investigating AL PRAs in KSA, this study seeks to answer the following questions:

1. What is the distribution of PRAs in applied linguistics during the period 2004 – 2022?
2. What are the most frequently applied linguistic topics covered by PRAs in KSA?
3. What are the research methods employed in the PRAs in the Saudi context? (Quantitative-Qualitative-Mixed)
4. What data collection tools were adopted in the PRAs in the Saudi context?
5. Who are the sample members, and what is the sample size utilized in the PRAs in the Saudi context?
6. What are data analysis procedures used in the PRAs in the Saudi context?

2. Literature Review

2.1. Applied Linguistics and its Scope

AL, being a relatively young branch of linguistics, has several definitions. It is a specialization that deals with problems relating to language knowledge to reach decisions for real life situations in which language is entailed (Cook, 2003; Richards & Schmidt, 2010). Richards and Schmidt (2010) point out that these problems include, but are not limited to, lexicography, translation, and speech pathology. AL is an interdisciplinary field employing information from a variety of fields such as sociology, psychology, anthropology, information technology and linguistics to produce its own approaches to language and language use, and it utilizes these approaches in applied fields such as “syllabus design, speech therapy, language planning, stylistics, etc.” (Richards & Schmidt, 2010, p. 29). Another definition provided by Richards and Schmidt (2010) is that AL is the “study of foreign language learning and teaching” (p. 29).

It is not easy to create boundaries for AL (Groom & Littlemore, 2011; Cook, 2003). This may be because AL is still in the process of establishing itself. In addition, applied linguists themselves disagree on the subjects or topics that AL covers. The nature of AL as an ‘eclectic interdisciplinary’ field makes it difficult to establish its boundaries. Cook (2003) proposes that the areas covered by AL are still ambiguous, but the specification is needed in the classification of the types of obstacles that are of concern in an organized way to outline the field of AL. However, Groom and Littlemore (2011), Simpson (2011) and Cook (2003) propose some areas that can be related to AL.

Groom and Littlemore (2011) state that AL has witnessed speedy growth and has widened its focus beyond foreign/second language learning and teaching. It is considered now to include topics of speculative nature. They suggest that AL includes:

1. Language teaching methodology. This branch focuses on various ways of teaching macro skills, grammar teaching, learners’ attitudes and beliefs, interaction in the language classroom, learner autonomy, language learning styles and strategies, affective factors, and differences between learning the mother tongue and target language.
2. Syllabus and materials design focus on the order of language material presentation and the effectiveness of syllabus types.
3. Language testing. This branch of AL deals with how to test learners’ language ability, the reliability of tests in measuring language ability and the relation between language ability and general intelligence.

4. Language for specific purposes. This area covers topics such as how instructors can assist learners in being members of a discourse community. English for academic purposes (EAP) aims at equipping international learners with the necessary academic skills needed to study in an American or British university, types of language in various fields, language genres, used in various specializations, business English, workplace communication, needs analysis and design and production of learning material.
5. SLA. Areas of SLA include distinction between second language acquisition and learning, bilingualism, multilingualism, psycholinguistics and neurolinguistics.
6. Language policy and planning: this category involves two levels. The first is concerned with the spread of English worldwide and the analysis of socio-economic and political reasons and the results of this spread. The second level deals with national language identity, the relation between official and unofficial languages and linguistic human rights.
7. Forensic linguistics studies the relationship between language and law and the use of language in legal processes.
8. Sociolinguistics and critical discourse analysis (CDA). Sociolinguistics concentrates on how people use languages to create and maintain social structures and hierarchies, the role of language in creating and maintaining a person's identity and accent change. CDA targets rhetorical objectives and ideological positions in news coverage of public events and analysis of everyday language.
9. Translation studies. This branch of AL tackles choices made in translation from the source language (SL) to the target language (TL), collection of translation influence on socio cultural situation of the languages involved and translation criticism (translation quality and evaluation).
10. Lexicography. Lexicography involves examining decisions made by lexicographers when compiling dictionaries and strategies used by dictionary users.

Internationally, research on topics or areas of interest to AL research has shown that topics such as SLA, technology and language learning, language teaching methods, language testing, teacher education and psycholinguistics were the most commonly investigated topics (Khany & Tazik, 2017; Yagiz, Aydin & Akdemir, 2016, and Solak, 2014).

2.2. Research in AL

Research in AL is, to some extent, a young area dating back to the second half of the last century (Phakiti et al. 2018). However, applied linguists such as Phakiti et al. (2018), Mackey and Gass (2012), Dornyei (2007), Brown (2004), Mackey and Gass (2005) and Nunan (1992) attempt to define research and to pave the way for better practice in AL research. Dornyei (2007) and Mackey and Gass (2005 & 2012) agree that research is finding answers to questions. Phakiti et al. (2018), Brown (2005), and Nunan (1992) believe that research is a methodical and grounded study. Tavocali (2012) and Nunan (1992) add that research is composed of a query, obstacle, hypothesis, data and analysis and interpretation.

According to Tavocali (2012) and Brown (2004), research should have the following five features. It should be systematic. In this respect, it possesses an obvious format based on specific operational guidelines for the study design, controlling difficulties affecting the study and selecting and applying statistics. Another feature of the research is that it must be logical. The guidelines on which a study is based formulate a direct and reasonable form – gradual progress of steps of constituents that are important for the logic to be successful. Research needs to be tangible in terms of being established on data gathered (occasionally manipulated) from authentic situations. These data could be of various types. Moreover, research should be replicable. This refers to the possibility of repeating the research because of the investigator's clear and accurate display and description of the method, logic, data gathering and data processing. This may assist in comprehending the study, reproducing it and evaluating its quality. The last characteristic of research is that it is required to be reductive. Research has the potential to decrease the bewilderment shown by language and its teaching. By conducting or reading research, new forms of facts might be revealed.

2.3. Related studies

Internationally, several studies investigated issues such as research methods, data collection tools, sample members and size and data analysis techniques in AL PRAs. Madu (2020) investigated 50 South Africans published English language articles. He found that the most common design was qualitative (68%), followed by quantitative (20%) and mixed methods (12%). As for sample members, the study revealed that 54% of the papers recruited students, and 46% relied on texts and documents. Almuhaimeed (2022) studied 197 research articles published in *ELT Journal* and *TESOL Quarterly* to reveal their topics, designs, data collection tools, and sample members. He found that teaching/ teaching methods and learning, assessment, and ICT /CALL were the most researched topics. The most common research design was qualitative, followed by quantitative and mixed methods design. As for data collection, Almuhaimeed concluded that interviews were the dominant tool, followed by observations, questionnaires, and tests. The most recruited sample members were university students and kindergartners. Meihami (2020) intended to reveal the topics and research methods adopted by 7 applied linguistics journals (1980 - 2019). He stated that the most investigated topics were teaching, learning and assessment. The trend in design differed in three periods; from 1980 - 2000, it tended to be quantitative; from 2001-2019, it was dominated by qualitative design; and from 2010 - 2019, mixed methods design started to

obtain some attention among researchers. Khany & Tazik (2017) found that the qualitative method was the leading method adopted by the articles. Additionally, it was revealed that the most common statistical techniques employed in these articles were descriptive statistics, Pearson correlation, ANOVA, and t-test. Yagiz, Ydin, & Akdemir (2016) revealed that the research articles under study adopted quantitative methods with Likert scale questionnaires as the most common data collection instrument. Samples were found to be undergraduate students with a sample size of 101 -300 participants. Descriptive statistics were the most employed in ELT research in Turkey. Another study conducted by Yihong, Lichun & Jun (2001) unveiled that AL research articles in China were on a continuum from non-empirical to empirical orientation with a rise in quantitative research. The empirical paradigm was found to be settled in the West, and qualitative methods were gradually dominating AL research. Plonsky (2014) showed that the focus of research moved from observational to experimental studies and from lab to classroom-based research. The results also revealed a decrease in random sampling and incorporation of a comparison group in experimental studies, a rise in pretesting and delayed post testing and a growth in sample size and statistical tests in L2 research. Lazaraton (2005) reported that 86% of the 524 research articles she surveyed used the quantitative method. The most commonly employed statistical analysis methods were descriptive (frequencies, percentages, means and standard deviation) along with ANOVA and Pearson correlation. Plonsky & Gass (2011) investigated 174 research articles in SLA to examine their design, statistical procedures and reporting practice. The results disclosed frequent employment of observational and lab designs for testing hypotheses, random group assignment and pretests. In terms of statistical procedures, it was found that the articles were interested in testing the differences between group means and frequency data to calculate chi-square and correlation. Data reporting used in the sample studies included reliability estimates, P-value and means and standard deviation. Tests adopted were t-test, ANOVA, and chi-square. Solak (2014) displayed that the most frequently studied topics were concept analysis and teaching and learning. It was also found that there was a greater tendency toward using quantitative than qualitative methods; undergraduate students were mostly the sample members across all the studies with a sample size of 31-100. Lazaraton (2000) concluded that 88% of the research articles were quantitative. Concerning statistical procedures, the most common one was descriptive statistics with frequencies, means and standard deviation. ANOVA and Pearson's correlation were also employed. Finally, ethnography was found to be the most adopted method in qualitative studies. These studies embraced various methods of data collection and analysis, and they focused on a variety of AL topics depending on their objectives. However, their outcomes are almost identical. Most of them are global in their context such as (Almuhaimeed, 2022, Plonsky, 2014; Plonsky & Gass, 2001; and Lazaraton, 2000), and some of them deal with specific contexts such as Madu (2020), Yagiz et al. (2016) and Solak (2014).

In KSA there have been very few studies investigating AL PRAs in KSA. Of special interest to the current study are two articles. The first is by Al Zumor (2014). He conducted the first Saudi study to investigate topics covered by AL research in KSA, topics that are not covered in research conducted in King Khalid University, KSA, between 2011- 2014 and the possibility of bringing this research outcome into practice. The study concluded that the 30 research articles studied covered areas such as technology and language learning, ELT methodology, vocabulary acquisition, language learning strategies, language and culture and errors analysis. The results also showed that AL research in KSA paid little attention to topics such as testing, learners' problems in speaking, listening, reading and writing, material selection and relevance, and translation problems. The second study is Alsowat's (2017), which examined 221 applied linguistics research articles published between 2007 – 2016 to show the situation of teaching English language skills in KSA. The study revealed that most of the articles adopted quantitative methods, most of which were quasi-experimental and descriptive. It was also found that most of the respondents in those articles were university students. Topics covered by those studies were language teaching and learning (strategies of teaching and learning language skills and teaching writing and reading skills) and the use of CALL in the instruction of the skills. This study is amongst the pioneer studies investigating the status of AL research in KSA.

3. Methodology

3.1. Design

The study adopted descriptive content analysis to account for AL research articles in KSA between 2004 – 2022. According to Yagiz et al. (2016), content analysis is a method employed to analyse written or spoken data. It is a method for transforming language data to be explained and dissected (Tavakoli, 2012). This leads to the conversion of qualitative data into quantitative, and it is classified into three types, one of which is descriptive content analysis followed in this study.

3.2. Sample articles

The articles were selected for this study by means of a purposive sampling technique.

3.3. Data collection procedures

A search was carried out in some databases, such as ERIC, Google Scholar, and Saudi Digital Library. Specific terms were employed in searching for the articles, including "English language, ELT, applied linguistics and Saudi Arabia." The focus was on articles published in Journals concentrating on AL. This focus on Journal articles was because those journals are more accessible than books since some of them are open access. They also follow a peer review policy.

Four standards are set for articles to be selected for analysis in this study. Articles should:

1. be written by Saudi university staff,
2. have method section clearly illustrating the design, participants, instruments, and analysis,
3. be conducted to cover issues related to AL in the Saudi context, and
4. be published between 2004 and 2022.

These inclusion criteria yielded articles written in various peer reviewed journals such as *English Language Teaching*, published by the Canadian Centre of Science and Education; *World Englishes*, published by Wiley Online Library. *International Journal of Instruction* and *King Saud University Journal of Language and Translation*, published by Elsevier. All these journals are indexed in SCOPUS, Web of Science, and other indexing systems. The search yielded 632 applied linguistics PRAs in Saudi Arabia. After screening them against the inclusion criteria, 455 articles were found to meet the study inclusion standards listed above. Thus, this study analyzed 455 PRAs in applied linguistics written in the Saudi context.

3.4. Instrument

The instrument used in data collection was an article classification form (ACF) adapted from Yagiz et al. (2016). After reviewing studies by Yagiz et al. (2016), Yihong et al. (2001) and Khany & Tazik (2017), the original ACF was adapted to suit the purposes of the current study. The ACF consisted of six sections. The first section covered basic information (title, journal name, year of publication) about the selected articles. The second section was about AL topics covered by research in KSA. It includes topics suggested by Simpson (2011) since Khany & Tazik (2017) state that these topics are the most detailed, comprehensive, and recent. The third section embraced research methods that are classified into quantitative, qualitative, and mixed methods. Section four included data collection tools. The fifth section focused on sample members and size. Finally, section six covered data analysis methods, descriptive and inferential statistical analysis, and qualitative analysis.

3.5. Validity

Validity means the extent to which research findings accurately lead to supporting its claims (Tavakoli, 2012 and Brown, 2004), and it is a standard for applied linguistics research. It entails the 'truthfulness' of study findings resulting from its instrument's trustworthiness. For an instrument to be trusted, it should cater for what it was intended for. The ACF adopted in this study was forwarded to a panel of applied linguistics specialists to evaluate its suitability to the aims of the study. They reviewed the form and provided some comments regarding its wording, terms used and layout. These comments were incorporated into the design of the final form.

3.6. Reliability

Reliability refers to the degree to which data collection tools produce steady findings in various contexts with different participants. It entails data coverage, correctness, and comprehensibility. It can be measured through interrater reliability, which means the extent to which various examiners concur in their evaluation of the participants' actions (Tavakoli, 2012). In this study, another examiner was employed to assess the same data using the same ACF to confirm consistency. The interrater reliability agreement was found to be 92%, which could be considered suitable for conducting the study.

3.7. Data analysis

The ACF was used to collect data from each of the articles in terms of the study variables. Then the data were coded and entered in SPSS version 21.0 for analysis.

4. Results and Discussion

4.1. Distribution of AL PRAs 2004 - 2022

This study covers published research articles in applied linguistics in KSA during 2004 – 2022. Analysis revealed that most of the research was published from 2014 to 2022, as it contributed 403 (88%) of the total research, Figure 1.

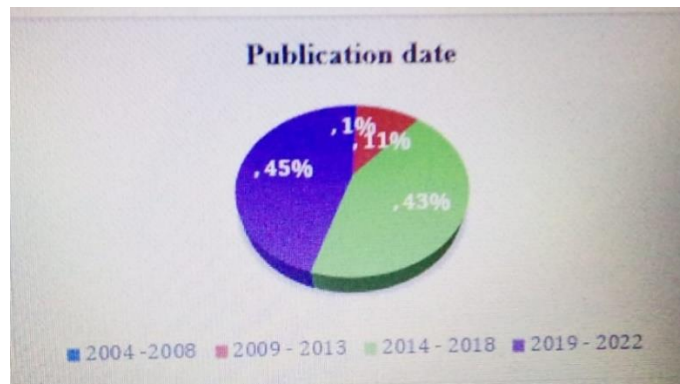


Figure 1 Distribution of AL research 2004 – 2022

This leap in the number of articles could be attributed to the increase in the number of universities in KSA. In 2016, the total number of public universities in Saudi Arabia was 30 compared to 8 in 2004. This resulted in an elevation of the academic staff in applied linguistics, who are expected to publish their research in the field. Additionally, budgets devoted to funding research in all fields encouraged university staff to conduct and publish research in various fields, including AL. These results contrast with what Yagiz et al. (2016) revealed. They found that the number of published ELT research in Turkey during 2005 – 2015 was the same. This difference in the results seems to be natural due to variations in the context and interest.

4.2. AL Topics covered in PRAs, 2004 – 2022

Table 1 below shows that researchers were interested in language teaching and learning and methodology, CALL, discourse analysis, psycholinguistics, and English for specific/ academic purposes. These findings imply that language teaching/ learning and methodology occupy most of the research interest because English is a foreign language in Saudi Arabia, and it plays an integral part in the Saudi educational system. It, therefore, attracts most of the research interest to find solutions to problems facing teaching and learning the English language. It could also be ascribed to the Saudi Ministry of Education's encouragement to researchers to investigate these areas. The results also indicate that there is a continuous attempt to ensure improvement in ELT practice. The results also imply that all AL topics were covered in the PRAs in KSA with varying focus. CALL and ICT, however, attracted only 11.2% of PRAs in SA. This does not reflect these two areas' positions in Saudi tertiary education. They play an integral role in the educational process. This is evident during the Corona crisis. Thus, these two branches need more attention in Saudi Arabia's AL research to reflect their role in the field. The results also indicate that AL researchers in KSA need to widen their scope of interest. These results are consistent with those of Khary and Tazik (2017), Yagiz et al. (2016), Alzumor (2014), Solak (2014), and Alsowat (2017). They concluded that language teaching and learning was the most covered topic in the studies they reviewed, in addition to other topics such as CALL, error analysis, discourse analysis, and psycholinguistics.

Table 1 Topics covered in PRAs in Saudi Arabia

Topic	No.	%
SLA	10	2.2
ICT in language teaching & learning	19	4.2
Language teaching/learning & methodology	217	47.7
Language testing, assessment & evaluation	21	4.6
CALL	32	7.0
Psycholinguistics	31	6.8
Language teacher education	14	3.1
Errors analysis	16	3.5
Language planning & policy	10	2.2
Vocabulary	2	.4
Discourse analysis	32	7.0
Sociolinguistics	7	1.5
English for Specific/Academic Purposes	21	4.6
Phonetics & phonology	4	.9
Grammar	8	1.8
Corpus linguistics	4	.9
Language & culture	6	1.3
Classroom discourse	1	.2
Total	455	100.0

4.3 Methods adopted in AL PRAs in the Saudi context, 2004 – 2022

Table 2 shows that quantitative methods were more frequent during 2004 – 2022 than the other methods; they are followed by qualitative design, and mixed methods appear in the end. These results imply that Saudi applied linguistics research favours the quantitative approach. This might be attributed to their ability to obtain large amounts of data from a large number of participants. The inclination toward a quantitative approach could also be assigned to the nature of generalizable results, the slightly challenging nature regarding time, energy, and money and their tight control (Dornyei, 2007). In addition, quantitative research is rigorous, systematic, and focused. The number of qualitative studies is less in the Saudi context than quantitative studies. This indicates that research articles in SA lack the sense of exploratory nature in studying novel uninvestigated topics or areas, a feature of qualitative research. In addition, this approach could have enabled researchers to differentiate between actual events and fabricated ones (Dornyei, 2007). The results also imply a need to cater to qualitative design to benefit from its ability to reveal a full comprehension of the phenomenon being investigated and provide rich data that broadens our understanding of issues related to AL. This could also be due to the nature of the qualitative approach that lacks methodical rigour and the non-generalizability of its results. Saudi AL researchers seem to be hesitant to adopt mixed methods because they are not willing to employ multifaceted research methods and complicated research questions. We can state that the small number of mixed methods restrains Saudi AL researchers from strengthening their research, reducing its weaknesses, providing multi-facet analysis, enhancing validity, and raising the acceptability of the results by many stakeholders. The results comply with what Yagiz et al. (2016), Yihong et al. (2001), Plonsky (2014), and Lazaraton (2000) found. They revealed that quantitative design dominated the research articles they reviewed. Additionally, the results contradict those of Almuhaimeed (2022), Madu (2020) and Meihami (2020), who revealed that qualitative design was the main design in their studies.

Table 2 Research methods adopted in PRAs in the Saudi context

Approach	Methods	No.	%
Quantitative	Experimental	72	15.8
	Descriptive	173	38.0
	Comparative	5	1.1
	Correlational	1	.2
	Survey	6	1.3
Sub-total		257	56.5
Qualitative	Case study	41	9.0
	Critical study	1	.2
	Content analysis	58	12.7
Sub-total		100	22.0
Mixed	Mixed	98	21.5
	Total	455	100.0

4.4 Data collection tools

From Figure 2, it is apparent questionnaires were the most common data collection instruments. They are followed by triangulation, tests, documents and text analysis.

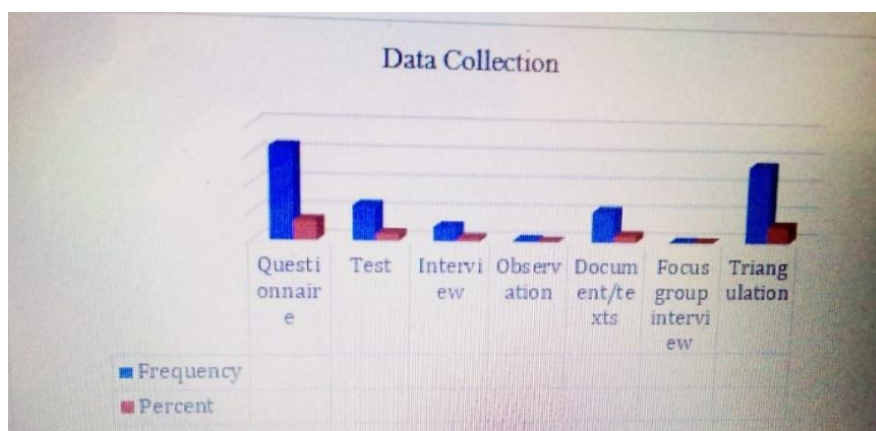


Figure 2 Data collection tools in PRAs in Saudi Arabia, 2004 – 2022

It seems that questionnaires, due to their benefits, draw researchers' attention in Saudi Arabia. Questionnaires are useful in large-scale studies involving large numbers of participants. However, they have low return levels, and the respondents may not be truthful. The adoption of triangulation indicates that PRAs care for validity and credibility. Mixing data collection tools overcomes the weaknesses of other tools (Dornyei, 2007). Moreover, triangulation contributes to minimizing errors in research. It also broadens our comprehension of the research problem and questions. More importantly, it allows for investigating many realities. Another advantage is that it reduces nepotism (Long, 2005b; Hastings, 2012; and Fielding, 2012). These results are in line with what was revealed by previous research. For example, Yagiz et al. (2016) concluded that Turkish ELT research adopted questionnaires of various types and interviews as instruments for data collection. In addition, the results disagree with what was revealed by Almuhaimeed (2022), who concluded that the articles he scrutinized relied more on interviews, observations, questionnaires, and tests.

4.5 Sample members and sample size

As it is obvious from Table 4, undergraduate university students, multiple data sources, professors, and documents and texts are the most prevailing sample members recruited for data collection. These findings indicate that AL researchers in SA are concerned with issues of interest to university students where most of these researchers work. They attempt to solve problems faced by their students in learning the language. Moreover, the results imply that undergraduates and university professors were mostly employed due to their accessibility; it is easy to locate them. University students are more conscious, and they can provide valuable data for research. The adoption of multiple data sources lends some credibility to data of the variety of points of view held by the members. This may yield various and contradicting opinions that could enrich data and provide more insight into topics under investigation. It was noted that managers, administrators, heads of departments and employees in government and private sectors were common in ESP/EAP research in the Saudi context. These results accord to those of Almuhaimeed (2022), Madu (2020), Yagiz et al. (2016), Sloak (2014), and Alsowat (2017), who revealed that the research articles they studied depended on undergraduate students and documents/ texts as sample members.

Table 4 Sample members in PRAs in Saudi Arabia, 2004 – 2022

Members	No.	%
Primary school students	7	1.5
Intermediate school students	5	1.1
Secondary school students	12	2.6
Undergraduates	241	53.0
General education teachers	15	3.3
University professors	61	13.4
Managers, administrators, Head of departments	2	.4
Employees in government & private sectors	8	1.8
Documents & texts	39	8.6
Multiple sources	65	14.3
Total	455	100.0

Figure 3 displays that, in most of the PRAs, the sample size ranging from 11 – 1000 was predominant. These results show that sample sizes 31 - 300 were frequently used because they are manageable. It must be noted that such numbers are more suitable for quantitative studies, and they depend on accessible populations. It is natural that researchers seek sample representativeness. In addition, a sample size of over 1000 was not commonly adopted since this number needs effort to find and manage. Sample sizes 1-10 and 11- 30 occurred in 124(27.2%) of the studies. They were associated with qualitative and experimental studies as these types of designs require small numbers of participants. These results match those found by Yagiz et al. (2016) and Solak (2014), who concluded that sample sizes of 31 – 100 and 101 – 300 were most common in the studies they reviewed.

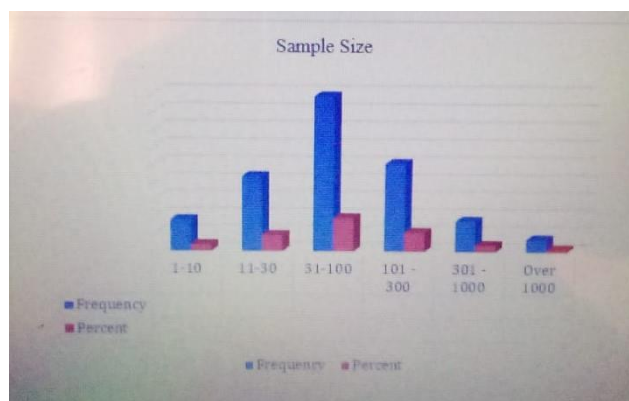


Figure 3. Sample size in ALPRAs in KSA, 2004 – 2022

4.6 Data analysis techniques

Multiple data analysis is clearly the most popular data analysis procedure adopted in Saudi AL PRAs. It is seconded by descriptive statistics and content analysis. These findings suggest that researchers cater for multiplying statistical analysis techniques in search to elicit trusted results. It should be noted that the use of sophisticated statistical methods requires knowledge and training on the researchers' side. These results accord with what was revealed by Khary & Tazik (2017), Yagiz et al. (2016), Lazaraton (2005 & 2000), and Plonsky & Gass (2011). They found that descriptive statistical techniques were the most analysis tools adopted in the research they investigated.

Table 5 Data analysis techniques in PRAS, 2004- 2022

Data analysis procedures		No	%
Descriptive	Frequency & percentages	68	14.9
	Mean/SD	33	7.3
	Chi-square	1	.2
Subtotal		102	22.4
Inferential	t-test	3	.7
	ANOVA/ANCOVA	1	.2
	Factor analysis	1	.2
Subtotal		5	1.1
Qualitative	Content analysis	78	17.2
Multiple data analysis		270	59.3
Total		455	100.0

5. Conclusion

The study aimed at analyzing applied linguistics PRAs in Saudi Arabia from 2004 – 2022. It focused on the publication dates 2004 – 2022, topics covered, the methodology adopted, data collection tools embraced, sample members and size, and data analysis techniques encompassed. The study analyzed 455 PRAs in refereed journals. Results showed that most AL PRAs were published in the years 2014 – 2022. In terms of topics investigated, it was found that language teaching/learning and methodology, CALL, discourse analysis, psycholinguistics, ESP/EAP, psycholinguistics, language assessment and evaluation, SLA, errors analysis and ICT in language teaching/learning were the most popular topics. These topics were investigated by employing quantitative, qualitative, and mixed methods, which were used in varying frequencies in PRAs in KSA. Nevertheless, these PRAs tended to neglect the mixed methods approach to research design which can be considered a weakness in the AL PRAs in Saudi Arabia. This is because it prohibits AL research in SA from mixed methods research strengths such as their exploratory nature, making sense of complex situations, broadening our comprehension of the phenomena under investigation, and they allow for longitudinal examination of dynamic events (Dornyei, 2007). However, it was revealed that data collection instruments seemed to be effective since a wide range of tools were used. Questionnaires, triangulated data collection tools, tests, and documents/texts analysis were the most dominant in applied linguistics PRAs in KSA. Depending on multiple data collection tools lends some credibility to the data used in the PRAs in KSA. Moreover, multiple data collection tools could provide more information than depending on only one tool. The most common sample members were revealed to be undergraduate students, multiple data sources, university professors, and documents/texts with sizes ranging between 1- 300. Finally, both descriptive and inferential statistics were usually used in these articles. In sum, it might be stated that AL PRAs in KSA are on the right track. They investigate various AL topics. This can

contribute to enhancing the AL situation in the Saudi Arabia context. It could further be strengthened by paying more attention to other areas of AL, such as testing, teacher education, error analysis and grammar. These topics receive little attention in AL PRAs in KSA; they could effectively contribute to the ELT/ learning and methods, which receives more attention in PRAs under investigation. PRAs in KSA also follow a variety of research approaches despite the focus on quantitative design. By paying more attention to qualitative research, mixed methods and sophisticated data analysis techniques, AL research in SA could be improved to produce effective results.

The findings of this study imply that the increase in the number of public universities and the attention paid to scientific research contributed to the activation and encouragement to conduct research. Additionally, AL researchers in KSA are interested in language teaching and learning/teaching methods stem from their concern for dealing with problems that face them in teaching or confronting their students while learning the English language. Furthermore, the researchers are aware of the importance of triangulation of data collection and sample members, which could lend credibility to data and provide more insights.

Based on these findings, it could be recommended that undergraduate programmes in the English language should provide well-designed research methods courses to train students in this area. Extensive training sessions and workshops are needed to be provided by Saudi public universities to enrich the staff's knowledge of research methods. Another recommendation is that AL research in KSA needs to widen its scope by paying more attention to topics such as CALL and other areas in AL. In addition, researchers should display more interest in qualitative and mixed methods designs to benefit from their advantages and to keep up to date. Research methods, understanding and experience, should be consolidated among researchers to increase the number of sophisticated statistical techniques and models with various sampling groups. The inclusion of sample members from other sectors should be increased to lend more impact to AL research in Saudi Arabia.

The current study has some limitations. First, the sample of the investigated PRAs is relatively small, so increasing the number of articles may yield more generalizable results. Second, the period covered in this study is quite short; hence expanding the period of research may provide results that could be more useful.

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Appendix

Applied Linguistics Research in Saudi Arabia 2004 - 2018

Article Classification Form

A. Article information

1. Article title:.....
2. Author(s):.....
3. Journal:.....
4. Year:.....(b) Vol.:..... (c) Issue:.....

Category	No	Item	Yes	No
B. Topics covered				
	1	Second Language Acquisition (SLA)		
	2	ICT in Language Teaching/ Learning		
	3	Language Teaching/Learning & Methodology		
	4	Language Testing, Assessment & Evaluation		
	5	CALL		
	6	Psycholinguistics		
	7	Language Teacher Education		
	8	Errors analysis		
	9	Language Planning & Policy		
	10	Vocabulary		
	11	Discourse Analysis		
	12	Sociolinguistics		
	13	English for Specific/Academic Purposes		
	14	Phonetics & phonology		
	15	Literacy		
	16	Grammar		
	17	Corpus Linguistics		
	18	Language & Culture		
	19	Language & Identity		
	20	Classroom Discourse		
C. Methods			Yes	No
Quantitative	1	Experimental		
	2	Descriptive		
	3	Comparative		
	4	Correlational		
	5	Survey		
Qualitative	6	Ethnography		
	7	Case study		
	8	Critical study		
	9	Content analysis		
	10	Mixed		
D. Data Collection			Yes	No
	1	Questionnaire		
	2	Test		
	3	Interview		
	4	Observation		
	5	Documents/ texts		
	6	Focus group interview		
	7	Introspective methods		
	8	Diary studies		
	9	Triangulation:.....		
E. Sample members & size			Yes	No
Members	1	Preschool		
	2	Primary school students		

	3	Intermediate school students		
	4	Secondary school students		
	5	Undergraduates		
	6	General education teachers		
	7	University professors		
	8	Managers, Administrators, Head of Departments		
	9	Employees in government or private sectors		
	10	Multiple members:.....		
	11	Documents & texts		
Size	1	1-10		
	2	11-30		
	3	31-100		
	4	101-300		
	5	301-1000		
	6	Over 1000		
F. Data analysis methods			Yes	No
Descriptive	1	Frequency/percentages		
	2	Mean/Standard Deviation		
	3	Graphic display		
	4	Chi-square		
Inferential	5	t-test		
	6	ANOVA/ANCOVA		
	7	MANOVA/MANCOVA		
	8	Factor analysis		
	9	Correlation		
	10	Regression		
	11	Non-parametric test		
Qualitative	12	Content analysis		
	13	Qualitative discourse analysis		
	14	Multiple data analysis methods:.....		