

Language Needs of Computer Learners

Evelyn E. Mbah^{1*} Chidinma G. Oputa²

- 1. Department of Linguistics, Igbo and other Nigerian Languages, University of Nigeria, Nsukka.
- 2. Department of Linguistics, Igbo and other Nigerian Languages, University of Nigeria, Nsukka.
 - * E-mail of the corresponding author: ezymbah@yahoo.co.uk

Abstract

This study aims at describing the language needs of computer learners. Needs analysis is described as an act of finding out the necessity for which the trainees or learners desire language in order to study efficiently. Due to the fact that the English language is an official language in Nigeria, the computer trainees find it difficult to use English for the Computer appropriately. This paper suggests ways of tackling the difficulty. The trainees' needs are grouped into three categories: communicative needs, grammatical needs and lexical needs. The trainees need to be motivated and committed to the act of learning the computer jargon. The findings reveal that while communicative needs are beneficial in increasing verbal interactions between learners; the grammatical needs are useful in discriminating grammatical categories and their functions and in learning simple sentences; and the lexical needs are useful in mastering the code used in the computer. Grammatical, communicative and lexical needs are important to the learners in order to attain proficiency in their training.

Key words: Linguistic needs; needs analysis; computer learners; communicative needs; grammatical needs; and lexical needs.

1. Introduction

Language plays a major role in human communication, thoughts, feelings and wishes. Man generally cannot function without language. For this reason, the English language which is our official language should be presented in authentic contexts to make the learners acquainted with the particular ways in which language is used to perform various functions. So, the emphasis is on the use of language for communication. However, language is normally learnt through a system of symbols which every fluent speaker of any language has thoroughly learnt. It is a code or system of forms according to the formalists. This is because they seek to replace real language with ideal language. The view of formal approach to language teaching was to give way and this led to the emergence of functional approach to language teaching. Functionalism is seen as a dynamic, open system by means of which members of a community exchange information. The approach of functionalism came to be referred to as communicative approach or simply communicative language teaching, which helps the learner to turn his considerable dormant grammatical competence into a real practical mastery of the target language (Bell 1981). In his book Teaching Language as Communication Widdowson (1978) notes that there is a different type of teaching syllabus built around a graded selection of rhetorical (or communicational) acts which the learner would have to perform in using English for his particular purpose. The scientist, for example, would necessarily make extensive use of such acts as definition, classification, deduction, and so on. Other learners would need to communicate in more ordinary everyday situation where greetings, making social arrangement, and exchanging information would be more important. There are various procedures for analysis of



needs as discussed in below. Such procedures are Munby's Communicative Needs Processor, English for Specific Purposes, and Needs Analysis are discussed below:

1.1 Munby's Communicative Needs Processor (CNP)

Munby's (1978) CNP is considered the most popular procedure for the analysis of needs. The communicative language teaching is a learner-centered and experience-based teaching. In this method, the instructors along with the trainees are to be seen as managers of learning and the role of the instructor is to be an organizer, a helper and an enlightener in training so that the learners could be relaxed and confident. Nevertheless, the aim of adopting a communicative approach is likely to lead to a representation of the language to be learnt which is in accord with the learner's own linguistic experience. Communicative approach involves extending the learner's ability to realize discourse from his mother-tongue to the language he is learning. The functionalist is to expose learners to a large quantity and variety of contextualized language materials. On the other hand, the Communicative Needs Processor (CNP) (of Munby 1978) consists of a range of questions about key communication. The notional syllabus of Wilkins (1976) stands as a bible for the practitioners of communicative language teaching and the aim of the syllabus is to conceptualize and plan the content of language in terms of the meanings we need to convey through language and the use we wish to put it to. A notional syllabus is more of organizing a language learning curriculum than a method or an approach to teaching. In the notional syllabus, instruction is organized not in terms of grammatical structure as had often been done with the lingual method. Functional/Notional Syllabus is used to teach English for Specific Purposes. Henceforth, ESP is seen as a cover term for teaching and learning English for several specific purposes: English for Academic Purposes (EAP), English for Occupational Purposes (EOP) and others.

1.2 English for Specific Purposes (ESP)

ESP is seen as a cover term for teaching and learning English for several specific purposes. The English for Specific Purposes (ESP) movement in (1970) espoused needs analysis as its principle which is the first stage in the design of a language training programme. Another related and accessible text is Hutchinson and Waters (1987). The text presents up-to-date information on ESP. The authors reveal that ESP evolved because of an outgrowth from the age-old English Language Teaching (ELT). The content and methods are based on the learner's reason for learning. In agreement with the above, the present study examines the objectives of the ESP courses specific to computer trainees and then investigates the needs of a group of computer trainees in order to see whether the objectives of the ESP courses are in line with the subject matter learners' need. Furthermore, the definition of ESP as teaching of English for any purpose that is specified, prompts Dudley- Evans (1998) to clarify the meaning of ESP, in terms of "absolute and variable" characteristics. In the absolute characteristics, ESP is defined to meet specific needs of the learners, makes use of underlying methodology and activities of the discipline it serves and is centered on the language appropriate to these activities in terms of grammar, lexis register, study skills, discourse and genre.

In the variable characteristics, ESP is defined for specific disciplines, may use specific teaching situations, or a different methodology from that of General English, is likely to be designed for adult learners at secondary school level., and is generally designed for intermediate or advanced studies. The division of ESP into absolute and variable characteristics helps in resolving argument about what is and is not ESP.

Research on Humanities and Social Sciences ISSN 2224-5766(Paper) ISSN 2225-0484(Online) Vol.2, No.6, 2012



It is worthy to note that the learners or the computer trainees are said to be deficient in their language because they have not been trained properly in order to master the need to express different functions of speech acts such as suggesting, requesting, describing, etc.

There are different components of the model ESP syllabus. Richards & Rodger (2003) identify three language models: Structural, functional and interactional use of language. They also identify five types of communication. The five types of communication are: intrapersonal communication, interpersonal communication, group communication, mass communication, and mass line communication. Based on the models and types of language and communication, the proposed model syllabus aims at developing language and communication skills to meet the communicative needs and language requirements of the industry (Munby, 1978; Nunan, 1988; Yalden, 1987).

1.3 Needs Analysis

Needs analysis was firmly established in the mid-1970s (West, 1998). In the earlier periods, needs analysis was mainly concerned with linguistic and register analysis, and as Dudley-Evans (1998) suggest, needs were seen as discrete language items of grammar and vocabulary. With the publication of Munby's Communicative Syllabus Design (1978) needs analysis moved towards placing the learner's purposes in the central position within the framework of needs analysis. Brindley's (1985) view calls for a 'broad' or 'process-oriented' interpretation of needs. He sees needs primarily in terms of the needs of the learner as an individual in the learning situation. He states that needs analysis means trying to identify and take into account a multiplicity of affective cognitive variables which affect learning, such as learner's attitudes, motivation, awareness, personality, want, expectations, and learning styles. He, however, adopts Richterich's (1983) dissimilarity between what is called 'objective' and 'subjective' needs analysis. Objective needs analysis aims at collecting factual information for the purposes of setting broad related goals to language content, whereas subjective needs analysis aims at gathering information about learners which can be used to guide the learning process once it is under way. He adds that while most teachers were attempting to identify learners' objective needs through collective combination of personal data, information about their language proficiency and interaction patterns, they had much more difficulty in systematically identifying and catering for subjective needs. Brindley (1989) and Robinson (1980) consider all factual information about the learners' language proficiency, language difficulties, use of language in real life to form objective needs, whereas cognitive and affective needs of the learner in language learning, confidence, attitudes, expectations, are considered to form subjective needs. Richards, Platt and Platt (1992) maintain that NA is the process of determining the needs for which a learner or group of learners requires a language and how they arrange the needs according to priorities. They add that needs analysis gathers subjective and objective information about the learner in order to know the objectives for which the language will be used, with whom the language will be used, and the level of proficiency required. Similarly, Fatihi (2003) defines needs analysis as a device to know the learners' necessities, needs, and lacks in order to develop courses that have a reasonable content for exploitation in the classroom. He adds that needs analysis is a process for identification of and defining valid curriculum and instructional and management objectives in order to facilitate learning in an environment that is closely related to the real life situations of the student. It brings into sharp focus the settings and roles that the learner is likely to face when he finishes his formal education. Computer Language is an artificial language that indicates commands to be performed on a computer. Similarly, computers can communicate with other computers through a series of connections and associated hardware called a network. Xie (2000) avers that using computers to teach is a universally



agreed practice in multimedia language learning programmes which provide texts, sound, images and interactive drills. He adds that the computer software and the Internet help the learners to study languages anywhere and anytime in classrooms, laboratory or at home. Computers also help instructors to update and create their teaching materials more easily. They can also exchange their products, thoughts and ideas with their colleagues using e-mail, mailing lists, web sites and other tools through the Internet.

1.3.1 Classification of Needs Analysis

Deriving from Hutchinson and Waters' (1987) classification of needs analysis, West (1994) propounds the following delineation:

1.3.1.1 Target Situation Analysis

The term 'Target Situation Analysis' (TSA) was, in fact, first used by Chambers (1980) in which he tries to clarify the confusion of terminology. He points out that TSA means "communication in the target situation" which identifies the 'necessities', i.e. the demands of the target situation or, in other words, what the learners need to know in order to function effectively in the target situation.

1.3.1.2 Deficiency Analysis

This approach to needs analysis has been developed to consider learners' present needs or wants which may be called the analysis of learners' *deficiencies* or *lacks*. Therefore, deficiency analysis can form the basis of the language syllabus (Jordan,1997) because it provides data about both the gap between present and target extra-linguistic knowledge, mastery of general English, language skills, and learning strategies.

1.3.1. 3 Strategy Analysis

This type of needs analysis has to do with the strategies that learners use in order to learn another language. It tries to establish how the learners wish to learn rather than what they need to learn (West, 1998). Obviously, the focus here is on methodology, but there are other related areas such as: reading in and out of class, grouping size, doing homework, learning habits, correction preferences, etc.

1.3.1.4 Means Analysis

It is mainly concerned with the logistics, practicalities, and constraints of needs-based language courses. West (1994) points out that some analysts believe that instead of focusing on constraints, it might be better if course designers think about how to implement plans in the local situation.

1.3.1.5 Language Audits

This basically includes any large-scale exercise forming the basis of strategic decisions on language needs and training requirements carried out by or for: individual companies, professional sectors, countries or regions (West 1994). He indicates that language audits may simply be used to identify and describe the current state of language teaching. Nevertheless, they may also be used to help a certain country or organization to formulate a new strategy based on the clients' needs that may take months or even years to implement.



2. Methodology

The target population of the study comprises 204 trainees, 126 females and 78 males. Three computer centers were used as the study units for the research. Afri-hub computer has 64 trainees in the morning session only; U.C. Network has 93 trainees in the morning, afternoon and the evening sessions, Kelvin Academy Computers has 47 learners in the three sessions. The target population consists of trainees resident in Nsukka. The questionnaire is structured in such a way that the respondents provided the information required for the study. "Communicative needs," has two major questions; the first question has fourteen items, whereas, the second question has six items with a four-point scale. These questions seek information on the communicative needs of learners. "Grammatical Needs," comprises one major question with thirteen graded items which also have the four-point scale. The section is designed to validate the respondents' information on the grammatical needs. "Lexical needs," is designed to crosscheck the respondent's information on lexical needs. It has ten graded items with alternatives. The findings of the study were based on data obtained from questionnaires distributed to the computer learners. The instrument was pilot-tested on a sample of those on whom it would be used in the main study. Six respondents were randomly selected to know if the items were clear enough and easily understood, whether there was the need to include more items in certain areas, or whether there were items to which they would not like to respond. From their responses, there was no need for further modification of the instrument. The information contained in the tables was used in the analysis and interpretation of data which followed each table

3. Findings and Discussion

The study presents and analyzes the data collected by the researcher in the course of the study. It shows the analysis of data using tables, frequency scores and simple percentages. The study analyzes communicative, grammatical and lexical needs of computer learners. This is presented in such a manner that readers can easily and directly find the options for each of the questions in the questionnaire. It is rated using the four point scale as follows:

1

to a very great extent 4
to a great extent 3
to a fairly great extent 2
Not at all

3.1 Communicative Needs

Communication is mostly through the use of language. Therefore, communicative needs implies the language lacks which the learners are taught and it should specifically be what they will use in speech. Interactions between computer learners are based on effective communication in order to improve speaking skills. Engaging the learners in interpersonal communication activities like conversation, chatting, group communication activities and mass communication activities like, public speaking, delivering lectures will make the learners to participate and perform in the interactive tasks.



Table 1: The Importance of Communicative Needs

	1	2	3	4
a. Asking questions	-	10 (4.9%)	94(46.1%)	100 (49%)
b. Interpreting data in Ms. Excel.	-	6 (2.9%)	91(44.6%)	107(52.5%)
c. Reporting events in Ms. PowerPoint	-	7 (3.4%)	93(45.6%)	104(51%)
d. Making requests	-	11(5.4%)	86(42.2%)	107(52.4%)
e. Giving directions	-	10 (4.9%)	88(43.2%)	106(52%)
f. Explaining a process	-	9 (4.4%)	83(41.1%)	112(54.9%)
g. Sharing opinions	-	4 (2%)	96(47%)	104(51%)
h. Evaluating ideas	-	15 (7.4%)	72(35.2%)	117(57.4%)
i. Solving a problem	-	5 (2.5%)	69(33.8%)	130(63.7%)
j. Learning how to make a web page	-	23 (11.5)	73(35.8%)	108(52.9%)
k. Suggesting an opinion.	-	-	95(46.6%)	109(53.4%)
1. providing accessible information	-	-	90(44.1%)	114(55.9%)
m. Translating into a scheme of work	-	15 (7.4%)	87(42.6%)	102(50%)
n. Learning communication/ meaning	-	-	69(33.8%)	135(66.2%)

It is clear from table 1 that (66.2%) of the learners state that the priority should be given to learning communication or meaning. 63.7% of the learners had the view that solving a problem in communication skills should be another important element to be covered in the English language course. They rate their performance in evaluating ideas, providing accessible information, explaining a process etc. In the aforementioned, the learners should be able to use the phonological units like accent, stress, rhythm, style, pause, tone, degree of delivery and turn taking. They should be given sufficient practice to increase speaking skills. The learners are required to understand where they need to take a pause and when they need to take a turn in speech. They also need to understand the role of pragmatics in speaking, for efficient oral communication. Learners should communicate not only through speaking the language but through reading as well, but it takes place at least between two people.

Table 2: Computer training increases verbal interaction between the learners in order to:

		1	2	3	4
a.	read computer books	-	-	95 (46.6)	109 (53.4%)
b.	read journals, magazines or newspaper.	-	15 (7.4%)	87 (42.6)	102 (50%)
c.	learn through online	-	15 (7.4%)	90 (44.1%)	99 (48.5%)
d.	learn through Microsoft office	-	18 (8.8%)	88 (43.2%)	98 (48%)
e.	read comprehension using online	-	19 (9.3%)	81 (39.7)	104 (51%)
	dictionary				
f.	read picture books	-	4 (2%)	102 (50%)	98 (48%)



The results in Table 2 reveal that (53.4%) of the learners responded that reading computer books increases verbal interaction between learners to a very great degree. 51% of the respondents claim that reading comprehension increases verbal interaction This was followed by picture books, journals/magazines, learning online and learning through Microsoft office. They need to practically understand how they need to convince the listener when using verbal interaction.

3.2 Grammatical Needs

Grammar is the linguistic norm used in pronunciation, word formation and word combination into sentences. Grammatical needs can be seen as the learners' lack of knowledge to use the English language without errors. The computer learners cannot acquire the writing skill without a basic knowledge of grammar. The learners however need to be conversant with the rules that apply in grammar.

Table 3: Grammatical needs are necessary in the following:

	1	2	3	4
(a) Making vocabulary list	-	10 (4.9%)	107 (52.5%)	87(42.6%)
(b) Grammatical exercises	-	16(7.8%)	100 (49%)	88 (43.2%)
(c) Filling a form	-	8 (3.9%)	103 (50.5%)	93(45.6%)
(d) Chatting	-	26(12.7%)	102 (50%)	76(37.3%)
(e) Composing messages	-	4(2%)	102 (50%)	98(48%)
(f) Editing	-	13(6.4%)	105 (51.5%)	86(42.1%)
(g) Facebook typing	-	15(7.4%)	107 (52.4%)	82(40.2%)
(h) Typing a business letter	-	2(1%)	124 (60.8%)	78(38.2%)
(i) Letter homophones such as, d-the, u-you, c-see, y-why	-	15(7.4%)	99 (48.5%)	90(44.1%)
(j) Shortening such as abt-about, qt-question, ur-your, progm-programme	-	10(5%)	131(64.2%)	63(30.8%)
(k) Letter/number homophones such as b4-before, 4u-for you, 9ce(nice) 9t (night)	-	17(8.3%)	99 (48.5%)	88(43.2%)
(l) Non conventional spellings such as der-there, takia-take care, dat-that.	-	7(3.4%)	101 (49.5%)	96(47.1%)
(m) Acronyms such as Fb-facebook, tb-textback, Lol-lots of love.	-	7(3.4%)	103 (50.5%)	94(46.1%)

In the process of needs analysis, as also revealed in Oputa (2011), grammar is useful in order to ensure that the trainees use the correct form of words or phrases. She affirms that grammatical needs are ranked by the respondents as follows: shortening, typing a business letter, making vocabulary list, editing, etc. The respondents claim that many of them use the above items in order to make their typing faster. For example, "Ask ur 6ta 2 send d money 2 me b4 I arrive 2morw,



instead of "Ask your sister to send the money to me before I arrive tomorrow". The grammatical needs of the trainees are 'to a great extent' because they need the correct forms of tenses, spellings and simple sentences in learning effectively.

The findings of this study are reliable on what the Singapore syllabus identifies as the grammatical items needed to master different types of text such as adjectives, adjectival phrases and clauses, adverbs and adverbials, connectors to do with time and sequence, direct and indirect speech, nouns, noun phrases and clauses, prepositions and prepositional phrases, pronouns, tenses to express past time, verbs and verb phrases. It is worth mentioning that the young generations of today use shortenings, acronyms, number homophones, non conventional spellings etc., in making sentences. The computer learners also use direct translation from mother tongue to the English language. For instance, the Igbo speaker can say, "the instructor ate our money", instead of "the instructor spent or embezzled our money". The ability to know these grammatical rules stipulated in Table 3 will improve the speaking and writing skill of the computer learners.

3.3 Lexical Needs

Lexical needs are the short sequence of utterance which learners need to master or be conversant with in training. Words like 'New', 'Open', 'Save' etc., express a unit of meaning respectively. The lexical needs are vital to the learners because they need to master the computer jargon which will enhance their speed in learning.

Table 4: How computer jargon could be made easy in learning the following:

		1	2	3	4
a. New	Ctrl + N	-	43(21.1%)	100 (49%)	61 (29.9%)
b. Open	Ctrl + O	-	27(13.2%)	101 (49.5%)	76 (37.3%)
c. Save	Ctrl + S	-	13(6.4%)	95 (46.6%)	96 (47%)
d. Print	Ctrl + P	-	31(15.2%)	91 (44.6%)	82 (40.2%)
e. Cut	Ctrl + X	-	37(18.2%)	69 (33.8%)	98 (48%)
f. Paste	Ctrl + V	-	21(10.3%)	98 (48%)	85 (41.7%)
g. Find	Ctrl + F	-	33(16.2%)	88 (43.1%)	83 (40.7%)
h. Cells	Ctrl + 1	-	33(16.2%)	98 (48%)	73 (35.8%)
i. Spell	ing F7	-	67(32.8%)	83 (40.7%)	54 (26.5%)
j. Thesau	rus Shift F7	-	46(22.5%)	76 (37.3%)	82 40.2
					%)

The overall percentage presented in Table 4 indicated that 49.5% of the respondents reveal that 'Open' (Ctrl+O), is to a great degree. This is followed by 'Open' (Ctrl+O), with 49%. The next on the line were 'Paste' (Ctrl+V), 'Cells' (Ctrl+1) 'Save' (Ctrl+S), etc. Some learners are at the average level in using 'Thesaurus' (Shift F7), 'Cut' (Ctrl+X),



etc. It could be argued that the trainees seem to be eager to learn the terminology if they are entitled to one computer and if there is a relaxing atmosphere which will help them to improve their lexical needs.

4. Conclusion

This study has tried to ascertain the English and Computer language needs of computer trainees. It reveals that communicative needs are more beneficial in verbal interaction between the learners and in all facets of computer training. It is clear that computer centers need language to carry out their training effectively. This is because a lot of attention has been given to verbal communication at the expense of other forms of communication, e.g., writing and other related sub-skills. Learning and practicing language to perform both speaking and writing activities will enrich the learners to be really productive and more communicative in any given situation. The grammatical needs of the trainees are useful in typing correct form of sentences. This can be corrected when we use a dictionary such as the thesaurus to check the correct spellings. The learners need to understand verb conjugations and they need to discriminate grammatical categories with their functions. The learners also need to acquire word power and should be able to distinctly use homonyms, homophones, scientific and technical terminology. The study also reveals that using the computer as a medium for studying grammar is much more motivating for a learner as opposed to writing with a pencil. The lexical needs are important in learning the computer terminology or jargon for the study. These lexical needs are the icon which the trainees need to master specifically when typing a text. It was also discovered that most computer trainees are not proficient in their use of computer terminology or jargon. High cost of computer and lack of access to a system are the possible challenges encountered by the learners which hinder them from mastering the code efficiently as was further revealed by the study.

Acknowledgement: We are grateful to Mr. B. N. Anasiudu of the Department of Linguistics, Igbo and other Nigerian Languages, University of Nigeria, Nsukka for his useful contributions and suggestions. We are however responsible for whatever blemishes that may arise from the work.

References

Bell, R.T. (1981). An introduction to applied linguistics: Approaches and methods in language teaching. London: Batsford.

Brindley, G. (1985). Some current issues in second language teaching. *Australian Review of Applied Linguistics*, 8(2) 87-133.

Brindley, G. (1989). The role of needs analysis in adult ESL programme design. In R.K. Johnson (Ed.). *The second language curriculum (pp. 63–77)*. Cambridge: Cambridge University Press.

Chambers, F. (1980). A re-evaluation of needs analysis. ESP Journal, 1(1), 25-33.

Dudley-Evans, T. (1998). *Developments in English for specific purposes. A multi-discisplinary* approach. Cambridge: Cambridge University Press.



Faltihi, A.R. (2003). The role of needs analysis in ESL program design. South Asian Language Review 13 (1&2).

Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learning- centered approach.* Cambridge: Cambridge University Press.

Jordan, R. (1997). *English for academic purposes: A guide and resource book for teachers*. Cambridge: Cambridge University Press.

Munby, J. (1978). Communicative syllabus design. Cambridge: Cambridge University Press.

Nunan, D. (1988). Syllabus design. Oxford: OUP.

Oputa, C.G. (2011). Language needs of computer trainees in Nsukka Metropolis. M.A. Project, Department of Linguistics, Igbo and other Nigerian languages, University of Nigeria Nsukka.

Richards, C. J & Rodger, T.C. (2003). *Approaches and methods in language teaching*. Cambridge: Cambridge University Press.

Richards, J. C., Platt, J., & Platt, H. (1992). *Dictionary of language teaching and applied* linguistics. London: Longman.

Richterich, R. (ed.). (1983). Case studies in identifying language needs. Oxford: Pergamon.

West, R. (1994). Needs analysis in language teaching. Language Teaching, 27, 1-19.

West, R. (1998). ESP- state of the art. Available at: www.man.ac.uk/CELSE/esp/west/htm.

Widdowson, H.G. (1979). The teaching of English as communication. In C.J. Brumfit & K. Johnson (Eds.). *The communicative approaches to language teaching*. (pp.15-19). Oxford: Oxford University Press.

Wilkins, D.A. (1976). Notional syllabuses. London: Oxford University Press.

Xie, T. (2000). *Using computers in Chineese language teaching*. Long Beach: California State University.

Yalden, J. (1987). Principles of course design for language teaching. Cambridge University Press,

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage: http://www.iiste.org

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. **Prospective authors of IISTE journals can find the submission instruction on the following page:** http://www.iiste.org/Journals/

The IISTE editorial team promises to the review and publish all the qualified submissions in a fast manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library, NewJour, Google Scholar

























