

**Designing a Suggested Computer-Based
Writing Programme for Primary School
Children in EFL Contexts**

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Abstract:

Computer-assisted language learning has become a subject of paramount importance in EFL/ESL, and its application to classroom practices has gained more importance, especially in writing instruction.

This paper is a theoretical treatment of an issue recently, yet frequently visited in EFL/ESL instruction-computer-based language learning in the area of literacy development. The paper provides a framework model for developing computer-assisted writing instruction. The study is structured around four sections: (1) an introduction, (2) a theoretical foundation, (3) landmarks of computer-assisted framework for the model. (4) The model gives forth useful tips for how to include software and hardware (word processing) and the access to the internet with special reference to e-mailing.

1.1 Introduction

Integrating technology, especially computers for learning, has become a major issue in the field of language learning in general and foreign language learning and /or teaching process in particular (Campbell and Zhao, 1996; Patrick, 1996; Sherman and Albert, 1996, to cite just a few).

In the light of the major findings of some previous studies, it has been indicated that technology is learned more effectively when embedded in content-based projects and that technology, especially telecomputing technology has been praised for its potential to

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facilitate collaborative learning activities (Newman, 1994; Waugh, Leving & Smith, 1994).

Furthermore, structuring harmonious interaction between learners and computing technology is essential, for learning has become an urgent need in a world now nearly computerized; people all over the world correspond with one another over e-mail, teach and learn via the Internet and use PC's and laptops whenever they want to communicate with one another, work or even have fun with the computer.

Computer-based language instruction has been a subject of a surge of research and curricular materials beginning as early as the 1960's and culminating in the late 1990's. This pedagogical approach, i.e., computer-based language instruction has been known by a variety of names: computer-assisted instruction (CAI), computer-assisted learning (CAL) or computer-assisted language learning (CALL). While there are slight nuances in these terms, the commonality is that they all refer to ways to maximize student learning through student-computer interaction. Using CALL has a dual benefit; it assures both individual accountability and interdependence among students through fostering the learner's pacing without negatively impacting his/her motivational structure: for every learner would proceed with the learning process according to his/her own pace without being discouraged by other people's progress.

Therefore, the present study is a theoretical perspective for designing computer-based writing activities/programmes in EFL classrooms seeking to glean testimony for the utility and usefulness of integrating CAL with curricular provisions in EFL contexts, especially and more importantly with children.

1.2 Research Problem

The problem of this study is an outgrowth of the upsurge in the literature pertinent to CALL. By so doing, the researcher is not in point of fact trying to catch up with the bandwagon, but she is trying to veer the attention of both theorists and practitioners in the field to pay attention to computer-based language learning which is now

becoming a major language learning approach in the developed countries. The researcher noticed that our TEFL practices at home and even in many Arab countries are done in a traditional fashion where the teacher uses the board and the chalk in an age where language courses are given and studied online.

Furhtermore, much of these basic drill-and- practice software programmes that dominated the market in computer-assisted language learning (CALL) focused on vocabulary or discrete grammar points (Higgins, 1993). And many studies recommend that more of it be used for classroom practice (Warschauer, 1996; 1997).

Warschauer (1997., p. 24) writes, "A vast array of drill-and-practice programmes are still available... Simulation programmes, while reinforcing grammar points, present students with real-life situations in which they learn about the culture of a country and the protocol for vaious situations". Examples of these programmes include the "Ticket" series by Blue Lion software and "Recuerdos de Madrid" from D. C. Health, which are simulations that provide country- specific situations in a task-based format. As well, "PC Globe" and encyclopaedia-type programmes are information-based software allowing students to conduct research in the target language. Yet, much of this software is directed towards children and young learners, and most of which is task-based or games-based.

Examples of this software include "Where in the World is Carmen Sandiego?" by Broderbund Software, or "Trivial Pursuit" from Gesture Publishers for learning culture and the target language through problem - solving and competition (Davis, 1992; Garrett, 1991). There are other several programmes for assisting students in composition writing. Aurhoring software and writing assistants include "Salsa" and "syst'eme-D" for students to aid them in writing composition in the target language through providing help in grammar, style, and verb conjugation and use.

1.3 Objectives of the Study:

This study is a theoretical treatment of computer-assisted

English language learning activities, especially writing activities involving grammar checking, spelling and orthography, word building, etc. Therefore, the intended audience is EFL teachers and practitioners as well as researchers seeking to collect testimony that attests to the practical uses of CALL-based writing instruction in EFL context; thus it aims at:

- Surveying the major approaches and history of integrated computer-based language learning in curricular and methodological provisions.
- Suggesting a framework for designing computerized activity-based writing programmes for EFL children in the primary school.

1.4 Rationale of the study:

- 1 - Using technology-assisted writing activities and software such as spreadsheets, databases, tutorials, etc. provides students with a good deal of practice in the process and product of writing. They can help students write at the word level, help them practise retrieving information, acquiring problem-solving skills, and word processing. Word processing is highly efficient for helping students with composition and free writing at the discourse level. When technology is interactively used among students, co-operative writing activities provide motivation and help for students to develop their writing skills, which is a major benefit in language instruction.
- 2 - The Internet is dominating all over the world, and in an age that can best be described as “an information age”, telecomputing technology has rendered available different modalities of communication, most common of which is e-mailing. Computer-enhanced instruction in writing can help develop literacy via e-mail.
- 3 - The merits of word processors as writing tools can clearly be exploited for language learning purposes, within what Phillips (1987) calls “the prosthetic of CALL activity”, when the computer is used as a device compensating for human limitations.

- 4 - Some software developed to develop literacy in children is essentially benefitable. As Papert (1980: 19) observes, "When children come into contact with computers, the computer is used to put children through their paces to provide exercises of an appropriate level of difficulty, to provide feedback and to dispense information".

2.0 Theoretical Framework:

2.1 Background of Computer-based language learning:

It has been reported that "the idea that children might some day use computers routinely for learning seemed a natural follow-up to the success of technology in science, industry and business (Dwyer, 1994:4) This observation is quite (i.e. clever) enough to indicate what researchers have noted of the profound changes in the nature of instruction, learning and assessment and even classroom atmosphere and culture which have been mediated by the use of computers in learning/instruction.

Findings of research conducted in this field have shown that when computers are routinely used in instruction trends indicate that achievement scores increased at 10-15 percent with 30 percent gains in student productivity (Kulik & Kulik, 1991; Kulik & Kulik and Bangert-Drowns, 1985).

In a report by Dwyer (1994: 4-5) it was found out that the use of computers in instruction has facilitated learning and teaching in that:

- 1 - Teachers were not hopeless technical illiterates, as they have personally appropriated technology for creative expression and personal work;
- 2 - Children did not become social isolates (in classroom environments as opposed to individual home environments where the controversial counterpart holds), for co-operative and task-related interaction has rendered classroom learning spontaneous and more extensive than was in traditional setting;
- 3 - Children's interest in and engagement with the technology did not decline with outline use;
- 4 - Children, even very young ones, did not find the keyboards a

barrier to fluid use of the computer; for 15 minutes keyboarding practice daily for six weeks, 2nd and 3rd graders commonly typed 20-30 words per minute with 95% accuracy compared to their peers who use their handwriting, the latter's speed rate was only 9-11 words per minute by hand; and

- 5 - Software did not prove to be a limiting factor, even in the high school classrooms, the trend shifting from heavy dependence on drill- and practice software - word processing, graphics and spreadsheets.

Furthermore, the history of computer-assisted language learning has gained momentum only in the '80's and '90's, though some theorists argue that,

“(A) decade ago, the use of computers in the language classroom was of concern only to a small number of specialists.. (But now) with the advent of multimedia computing and the Internet, the role of computers in language instruction has become an important issue confronting large numbers of language teachers throughout the world, (Warschauer and Healey, 1988).

Computers have been used for language teachers over 30 years which Warschauer and Healey (1998) have roughly divided into three main stages: *behaviorist CALL*, *communicative CALL*, and *integrative CALL*, a division that roughly corresponds to the theoretical history of language teaching. As Warschauer and Healey observe (1998:1): “*Each stage corresponds to a certain level of technology as well as a certain pedagogic approach*”.

The first stage, behaviorist computer-assisted language instruction features a repetitive mode of language skills, the oft-repeated “drill-and-practice”, or *drill-and-kill exercises*. This mode of instruction then popularized in the States in the '60's introduced the computer as a mechanical tutor that “*would never grow tired or judgmental*” to allow students to work at an individual pace. In this regard, *PLATO* had become a very well known tutorial system consisting of a central computer and terminals and featured

extensive drills, grammatical explanations and translation tests at various intervals.

As for communicative computer-assisted language learning, this stage emerged in the late 1970's and early 1980's when behavioristic theory and practice were abolished. Communicative CALL stressed that computer-based activities should focus more on using forms than on the forms themselves, teach grammar *implicitly* rather than *explicitly*, allow and encourage students to generate *original* utterances rather than just *manipulate* prefabricated language, and use the target language predominantly, or even exclusively". (Underwood, 1984; Jones & Fortescue, 1987; Phillips, 1987).

Communicative computer-assisted language learning theory and practice are grounded in the cognitive theory of learning that discerns learning as an interactive process of discovery, expression and development.

CALL activities based on the communicative theory of learning are structure around "text-reconstruction programmes" to allow students to work individually or collaboratively to rearrange words, texts, discover language patterns, etc.

Communicative CALL began to ebb away, for the computer was used in a disconnected, far-fetched fashion and the cognitive theory of learning began to veer off to a more socio-cognitive orientation, with emphasis shifting to the real use of language in authentic social contexts.

This has given way to the integrative CALL stage since the early 1990's when task-based, project-based and content-based approaches emerged to integrate the various skills of language learning and use in authentic or semi-authentic environments (Warschauer, 1996).

Integrative computer-aided language instruction seeks at large to integrate the four macro-skills, and further and above all, the fifth often-ignored thinking skill in language instruction. And for integration to be effective, a group of activities have to be introduced which would as Brown (1991:246) puts it

“encourage students to explore and be creators of language rather than passive recipients of it...”,

These activities aim at:

- 1 - Providing realistic, native-speaker models of the language in a variety of media;
- 2 - Offering a language learning curriculum;
- 3 - Doing a needs assessment;
- 4 - Determining the best next step for the learner to provide for more practice in a certain skill and;
- 5 - Recording what the student has done, along with an evaluation; and
- 6 - Being less costly, more benefitable and available. (Warschauer and Healey, Op. Cit.).

2.2 CALL and Teaching Writing:

Furthermore, research investigating the way writing is taught and how it can potentially be learned has impacted computer-assisted English language learning in the writing skills. Research has found out that most teachers are concurred with the final product of writing, but have little understanding of the process that successful writers use in creating that product (Hansen, 1987; Harste *et al.*, 1988). As was traditionally followed, students have been asked to produce compositions on demand, with little guidance on how to work through the steps that quality writing requires.

However, proponents of various writing models endorse writing as an ongoing, multi-stage process moving back and forth between the process and the product of writing. Still, one of the barriers to producing good writers, notwithstanding the pedagogical approach, is that students must by necessity use pencil and paper to jot down (transcribe) their thoughts and ideas. Many children are able to express thoughtful experiences but have difficulty with handwriting; they labor over the first version. The barriers might incorporate revising and recopying for a final draft, a process that is characteristically fraught with tedium and pain. Thus, writing becomes an

overwhelming burden; repeated erasures, drafting and revision are sure to implant frustration and despair in young children.

Therefore, educational computing has undergone a change of focus regarding how the microcomputer should be used in language arts, and especially in writing (Cochran- Smith, 1991). A word processor can become the centerpiece for an effective writing curriculum, encouraging early language production and providing students with opportunities to integrate writing and reading.

Still, there remains a significant point surfacing in research on educational computing in writing: CALL cannot eliminate problems. Yet, Bright (1990) mentioned that with instruction and support from the teacher and peers, most students could experience success in writing through the use of a word processor.

2.3 AI and CALL:

Artificial intelligence as a recently emergent scientific discipline has language processing and language comprehension as two highly important topics; therefore "AI journals and conferences regularly devote large sections to aspects of the problem of natural language communication with computers (Kenning and Kenning 1990:18).

Artificial intelligence researchers investigate the relationship between the functioning of the human mind and language, as there is reasonable agreement that language and thought are closely related in most adults (Eysenck, 1984: 207). And while work in AI now includes the study of other human cognitive capabilities, and also the development of intelligent systems, "the analogy between language processing by humans and language processing by programmed computers still holds feasible by both researchers in human cognition and AI researchers "(Hamburger and Crain, 1987) with both categories of researchers (i.e., artificial intelligence researchers and computer-assisted language learning researchers) aspiring to grasp how the human mind functions and by analogy how to develop more efficient intelligent systems.

Furthermore, interest in human language processing among A I

community stems from practical software requirements (Kenning & Kenning, 1990: 19). For example, much of the early work in developing artificial intelligence systems used games, bridge or chess in which the knowledge base goes back to human experience as readily simulating the expertise of players of varying proficiency.

Developmental offshoots of AI computer science as applied to language processing and/or learning is machine translation. Arnold and des Tombe (1987; 117) have proposed a model for machine translation which proceeds along a continuum of analysis, transfer, and synthesis:

- *analysis* is the mapping from the source language to its internal representation language;
- *transfer* is the mapping from the source internal representation to the destination on internal representation;
- and *synthesis* is the mapping from the destination internal representation language to the destination language itself.

EVROTRA system is one such project that functions according to the previous procedural sequence.

However, Searle (1984: 18) has pointed out that such computer simulations of the human cognitive functions and processes, however sophisticated they are, don't reflect the same degree of complexity as is actually the case in the human brain; human cognitive processing of language can be, neurological. Speaking is, "as simple and automatic as making footprints in the sand". Yet, the simulations tell much and shed more light on how to develop language instructional programmes. In this context, Weischedel and others (1978) have long designed a *Q & A programme* for testing German comprehension. By the same token, Emmanuelle (1986) devised a micro-programme for teaching how to use vocabulary.

As to the application of AI techniques and procedures to CALL, the emphasis is on natural language processing as a way of simulating natural communication, with the learner being the centre of the learning process. This is because CALL (as opposed to CAL) is more communicatively-oriented, and when it comes to commu-

nicative drills researchers and practitioners in the field (CALL teachers) find themselves faced with a gigantic problem, since drill of such a category would leave both the content and the form to the learner, and this open-endedness is still a major obstacle to computerization of language activities designed in the fashion of CALL. And yet more difficult would be the adaptation of such communicative activities which in some cases can not be adaptively handled by the software.

However, communicative activities involving drill-and-practice are beneficial: Beaton *et al.* (1986:11) writes:

“... it is unwise to be too dismissive of what might appear to be trivial. Drill and practice is a much maligned computer activity, and rightly so if it is the sole diet of our pupils both at the keyboards and at their desks. However, because our patient computer can inject an element of competition, colorful graphics, the “not-knowing what will come next”, factor and instant feedback, what might be boring and counter-productive with a piece of paper becomes a highly raed activity with demands from pupils to be allowed to try it again and agin”.

2.4 CALL and Communicative Activities:

Computers can promote communicative language teaching, but this largely depends on how much the computer is involved. In this regard, a distinction between three terms has to be introduced. The terms are *computer-based instruction*, *computer-assisted instruction* and *computer-controlled instruction*. In the computer-based type of instruction, the computer exercises a fair, balanced amount of control over the activity when “Participants dialogue primarily with the keyboard and screen”. While in computer-assisted instruction the computer is peripheral and what counts is the interaction between the learner and the activity with the computer being a mere medium for instruction. Yet, this distinction relates both to material development and usage. In one case CAI can suit the design of a given

package at a certain age better than CBI. As for computer-controlled instruction, Crookhall and Martin (1985) posit that the computer retains control, and there is no on-going interaction.

In computer-based instruction, communicative teaching is encouraged and software is designed to meet this end, for it is not enough to provide learners with instances of formally correct or functionally authentic language usage, but to give them as well opportunities to use the language creatively “for the normal purposes of communication”.

2.5 The Necessity to Include Children:

Children from homes whose language is not English should be encouraged to cultivate their English as an FL/SL. This is because there are several principles that govern the child’s acquisition of a second language; these are:

- 1 - Children can acquire as many languages as over 12 different ones, that their linguistic parameters can be reset so flexibly and miraculously.
- 2 - There is an ebb and flow to children’s bi-or multi-lingualism; in most cases bi-or multi lingual children will reach an age - level proficiency in their dominant language given adequate exposure and opportunities for use.
- 3 - There are different cultural patterns in language use. Teachers can identify these differences through classroom communication patterns. For instance, some children may not participate verbally in classroom activities, calling attention, for example to oneself or showing one’s knowledge can be regarded as “overly assertive and even arrogant form of behaviour” (Phillips, 1972).
- 4 - Children come to learn second languages in many different ways, the two most common ones being simultaneous acquisition of two languages (or even more) and successive

acquisition of a second language. The rate of acquisition varies depending on the amount of exposure and support the child receives as well as on individual differences.

- 5 - Language is used mainly for meaningful communication. Children will internalise a second (or more) language (s) more rapidly and yet more readily if they are given meaningful task-based activities that require using the language. CALL software is especially designed to meet this end.

CALL-based software is designed around a set of steps which Wong Fillmore not long ago (1985) recommended; these include:

- Using demonstrations, modeling, role-playing.
 - Presenting new information in the context of known information.
 - Paraphrasing.
 - Using simpler graded structures.
 - Pattern repetitions/routines.
 - Tailoring questions for different levels of language proficiency and participation.
- 6 - Language flourishes best in a language - rich environment. Second language learners need to be exposed to meaningful literacy activities. This is essential for children from homes where literacy activities may be rare.
 - 7 - Children should be encouraged to experiment with language. Learning a second language is similar to learning a first language in that a child needs to experiment with and produce utterances that move gradually on a continuum of accuracy versus fluency. CALL software is especially so helpful in this through simulation, chunking of language and ongoing feedback received instantly which help children develop their language skills and especially literacy.

Furthermore, Hall (1987) suggests that the early childhood language programs:

- 1 - view the emergence of literacy as a continuous process;
- 2 - and provide ample time for discussion and reflection.

These recommendations aptly support the use of whole language learning assisted by the computer.

In addition, computer networks (the Internet and Intranets) can provide an important means of communicating with fellow-students in the target language. In this regard, Sullivan (1993) describes her 2-year experience working in computer-assisted writing laboratory at the University of Texas at Austin with native and non-native speakers of English:

“ESL students are often hesitant to speak-out in class because of shyness, insecurity about being understood or cultural reasons... In this setting, however, students who needed more time to form responses were able to present their opinions and to interact more easily. In short, in our electronic discussions, all the students were able to participate actively. (P.34).

Electronic discussions especially in computer-assisted language learning environments help learners initiate and extend their discussions and can effectively be conducive to more collaboration. That is what CALL can effectively bring about in the classroom.

However, Richard-Amato (1996) warns of programmes that use general reactions to student efforts such as “*How interesting!*” or “*Nice Job*” regardless of what has actually been written (P.290). Richard-Amato further warns computer-assisted writing instructors of programmes that accuse students of being “wordy” or the sentences are too long or “not that clear” if the ratio of nouns to verbs is too high.

Parkhurst (1984) feels that such programmes may focus the students on mechanics at the expense of meaning or make the student overly concerned with sentence length as opposed to clarity, thus jeopardising the primary function of writing as a medium of communication.

3.0 Computer-Assisted Writing Instruction: Landmarks

With the notion that Bright (1990), Warshchauer & Healey

(1998) and Warschauer (1996 a, b) have suggested, CALL can be an efficient facilitator of the writing process, the following have been spotted as landmarks on computer-assisted writing instruction.

3.1 Revising:

As a tool for practice in writing, the word processor has been identified as an unparalleled useful facilitator of writing.

Writing researchers have long advised that to be fluent in writing necessitates that learners train and drill in writing/keyboarding as much as possible. However the key to error-less writing is repeated, careful revision. In this context, Newman (1984) discusses two points of significance: first, the relationship of recent research on learning to write to word processing, and second the difference between using computers for drill and practice and using CALL for word processing, typically as a typewriter.

As for the first issue, Newman observes that writing improves more *by experimenting with many aspects of the process at the same time than by mastering separate skills and blending them*. Word processing, unlike, the tedious, painstaking handwriting allows for rapid changes and good manipulation of texts, thus helping young writers sustain their mental lexicon while experimenting with language. This search (through misspellings) capability which word processors render available encourages synonym substitution, and the immediate access to a clean copy stimulates further language arts. This may not yet be evidenced by strong research testimony, it may most likely be applicable since it strengthens and upholds semantic memory. This is what cognitive researchers term “effect of familiarity”; frequent subjection to seeing the word conduces to better recognizing and producing it. As for the second point, with drill and practice software, the computer software instructs learners into what to do and, furthermore, controls what is learned. However, the learner with word processing is the only one who exerts control both on what to learn to write and how to use the computer.

What is more, word processing for young writers who lack

experience in keyboarding tend to make corrections at the word level and therefore, proofreading on the screen is much easier for them.

But with experience growing, beginning writers tend to make more elaborate and sophisticated changes that may cover the organizational structure of the text to be written; these involve moving sentences and paragraphs, reshuffling whole sections of the text, inserting new material or discarding (deleting) writing that no longer fits or serves.

Even so, for beginners it seems easier for them to use the delete, strikeover, and insert functions to make simple changes.

3.2 Classroom Problems:

For teachers and students alike, the typical problem involves the availability or absence of computers in the classroom, and another hidden problem is time management. In one model of CAL (Computer-assisted learning) of writing, children may write first on paper. Then at the word processor, students can “fine-tune” these papers. Students on revising may add new information or delete some, supercede other, examine for clarity or look for sufficient elaboration. Finally, in this model, the text can be checked for minor errors and punctuation.

Time is crucial; however, if children are let loose to use their computers, then they are sure to consume too much time, which is not suitable given our context and paucity of facilities.

Furthermore, Simic (1994) critically observes that the word processor offers great advantages but also makes great demands, for effective use of the word processor, schools have to show more interest in word processing in commitment to its use, and more importantly, classroom teachers “must make an even stronger commitment, since the teacher must invest a great deal of time in teaching students how to use it (Simic, *ibid*). Even teachers have to familiarize themselves with the word processor.

A *peer system* can be set up by showing one group of students how to make use of the word processing programmes.

3.3 Inequities in School Computer Use as a Constraint on CALL-Driven Writing Instruction:

Early this decade, the Centre for the Social Organization of Schools (CSOS) in the U.S. in 1983 through 1984 conducted a national survey of over one thousand schools which revealed that lower-income students have less access to computers than do middle and upper class and / or high-income students, a finding that was not so surprising, as it is known that affluent parents and school systems are better able to invest in such costly equipment.

The survey also revealed that non-white and limited English speaking students frequently go without computers in their schools, and those without access to computers are generally given drill-and practice exercises, rather than problem-solving or other more challenging software (Kleifgen, 1989). Furthermore, the survey of CSOS found out that female students, regardless of their social class spend less time in school on computers than males. An important reason for this was found to relate to the type of tasks assigned, a result which requires us to reconsider our present CALL programmes (if there is any).

3.4 Word-Processing and Developing Literacy Skills:

Hoot and Kimler (1987) have early argued that those who work with children and young children in particular are aware that children are generally quite effective in making themselves understood.

But despite the fact that their language is very much alive, fresh and creative, and “often unpredictable”, their oral competence is high yet they have less potential for achieving equal competence in written communication, the reason being a lack in their motor facility.

Over the past few years, word processors specifically developed for young children began to appear. For example, children word processors are thought by experts (Warschauer and Healey, 1998; Warschauer, 1996; Tolliver, 1992) to support beginning writers in many ways;

- 1 - They can provide visual, motor, and possibly mandatory supports for unsophisticated learners.

- 2 - They often encourage young learners to write more, since the mechanical drudgery traditionally associated with writing is minimized;
- 3 - They encourage writers to focus on the content of what is said rather than the form or mechanics of writing;
- 4 - They are conducive to more revision on the part of children, a nearly ignored aspect of the writing process, as said before;
- 5 - They provide products that are printed with a letter quality appearance that encourages children to share written communication;
- 6 - They involve the computer screen, thus giving way to more peers sharing the same material;

In this way, word processing in addition to its potential to developing literacy skills encourages social interaction in writing;

- 7 - They make writing more appealing to LED (limited English development) and special needs children;
- 8 - They encourage positive attitudes towards learning in many curricular areas.

Recently, and importantly, on the way of integrating the language skills, there appeared word processors that can actually speak texts written by children. Initially, this development is highly motivational and can promote the improved understanding of the relationship between the letter and the sound and between word and sentence.

3.5 The Computer Lab-And Task-Based Activities:

As has been mentioned, the history of computer-aided language instruction (CAI) provides a model for reevaluating the role of the language lab. Contextually, computers were only introduced as a means of providing programmed instruction; computer programmes were designed to replace the teacher in the more mundane tasks (drudgery) of drill and practice. CAL developed into CALL, programmes for language learning that are more communicatively oriented, teacher-directed task-based in computer use (Jones, 1986; Blaire, 1987).

Computers have not been introduced in the classroom as an intrinsic component of audiolingualism and they have an indefinite range of applications other than language learning, which are reasons that make computers / computer labs more desirable without the rejection that traditional language labs face.

Thus, language labs need to be further equipped with computer facilities, or to adapt more computer applications to the language lab. Task-based activities are a means of integrating interactive learning through use of the language lab, which potentially focuses on communicative fluency, rather than linguistic accuracy.

Computer-assisted task-based activities have three main characteristics (Stone, 1991). First, they have a goal or purpose that requires the use of the target language, but it is not self-centered on that language. Second, the activities involve making use of the facilities of the computer, which are not elsewhere available in the regular classroom. The third characteristic of a task-based activity is that it involves the student in a way that intrinsically motivates, lowers the affective filter, and accelerates a desire to make progress, and more importantly to excel. One element of motivation is to want something, and to want something is (as well) to be motivated, and motivation initiates and sustains involvement in learning (Spithill, 1980, P. 72).

Furthermore, the role of task-based activities is to provide learners with opportunities to use the target language contextually, and to explore the target language through situational activities.

Only in this way is the teacher's role manifest as a facilitator, a guide and advisor of the learning process, yet indispensable. Or as Wilga Rivers (1987) writes "*Part of the teacher's art is to create, or stimulate student creation of, the types of situations in which interaction naturally blossoms and in which students can use for actual communication what they have been learning in a more formal fashion (P.4).*"

4.0 A Framework for CALL-inspired Literacy Development:

Following is a sketchy model for interacting computers in literacy development for children.

4.1 Aims of the Model:

This model aims at:

- 1 - Providing a framework for researchers to experimentally verify its utility.
- 2 - Providing practitioner teachers with insights into how to apply CALL principles to literacy development.

4.2 Choosing Software for Children:

A first step to select appropriate software for children is to consider its purpose. Then, the instructor has to determine how well the programme succeeds in its goals. Both steps have to be considered in terms of the age and experience of the child to use it, which, in subsequence, determines how effective the software is.

For this to be achieved it would be helpful to ask these questions before selecting the software; these questions shed light on the characteristics of software appropriate for the targeted audience.

- Does the software contribute to children's comprehension of the world?
- Does it foster and satisfy children's curiosity?
- Is the content of interest to children?
- Does the software require a high degree of interaction from children?
- Does the programme have to be run via clear directions?
- Does the software need more adult help or can the child manage it alone after some experience with the software?
- Is the software costly? How can the teacher make it available for the majority of young learners?

4.2 The Structure of the Software:

- Software that requires children to match responses in the computer's memory rather than create their own as in *Multiple Choice Questions* or *True/False* or *Matching* are all highly structured programmes. Other less-structured software encourages self-expression or creative writing.

- The child may be asked to use computer “tools” such as word processing programmes, programmed musical tones, or a colour palette to create their own stories, compositions, or designs,
- *Simulations* and *logo* are among such programmes that provide a computer environment in which children can experiment creatively with the language and develop their skills, while tutorials and drill-and-practice programmes are amongst the highly structured software (Spencer, 1986).

4.3 Curricular Provisions based on the Call-BASED Model Tenets:

In a typical computer-assisted instructional setting, students and teachers work together as a writing community, with students responding to one another in a co-operative learning environment. Moreover, writing together on a word processor engenders, as has been earlier stated, both oral and written language with each mode of communication enriching the other. Both teachers and students talk about the text that they are drafting and revising, and after that, the words and phrases displayed on the screen are subject for discussions.

One of the most exciting applications of computers for the development of literacy has been the use of electronic mail. Tolliver (1992) uses electronic mail to provide informal writing practice with an undergraduate Spanish composition class. Students are asked to participate in email discussions with peers and are informally evaluated as part of their homework grade.

One more innovative way to use the computers in language instruction beginning at a relatively early level of instruction is through a specifically designed software programme such as *System - D: Writing Assistant for French*, developed by Noblitte and Pet for students at the Novice through Advanced level in writing (Alice Omaggio, 1993).

However, programmers of *systeme-D* (in Windows or Dos) have proposed this software as only an additional resource for students beginning from Novice through Advanced levels (in ACTFL taxonomy of proficiency levels). *Systeme-D: Writing Assessment* is a

highly useful programme that besides moving in the learning process gradually in accordance with the learner's pace, contains various kinds of resources, with special dictionaries for vocabulary, grammar, functional expressions and discourse frameworks. Besides, the software provides evaluative feedback to track students strategies and processes while writing on the monitor which can eventually provide teachers with information as to the problem areas in students' writing.

In this regard, software appropriate to children in terms of their age, prior experience and proficiency can be tailored by the class teacher to meet the needs of pupils. But if, however, no ready-made programmes are available for the writing instructor, or ordinary classroom teacher, (s) he can design simple tasks for the students, illustrate how they can be done and then ask them to simulate what (s) he did: a sample task, would be writing a letter. The sample task below is derived from the French version of *systeme-D*, and is intended to lower intermediate pupils. Bold words/phrases are the software cues.

Context: *you are writing a letter to your Japanese pen friend, Yorio who visited you last year.*

Tasks:

- 1 - Use appropriate format; phrases should go informally.
- 2 - Ask him how his visit to your country was like.

Grammar: *Yes/ No questions; Wh- questions: how; did you like;/past simple/ present simple.*

Vocabulary:

Likes, dislikes; adjectives of attitude (interesting; wonderful; friendly; convivial; nice, etc.).

- 3 - Ask him how the weather is like in Japan. **Phrases:** *weather-related (in winter; in summer; like most; like least; come down in buckets; a broiling day, etc.).*

Words: *describing weather (e.g. cold; hot; broiling; humid, etc.)*

Grammar: *wh-questions and Yes/No questions/present simple.*

- 4 - Ask him if he is able to visit your country back.
- 5 - Close the letter appropriately.

Terry and Scott (1992:42) in their revision of *systeme-D* aptly observed that “while most students are grateful for the explicit directions provided in the task-oriented exercises, it is important to note that some students feel that the tasks limit their creativity. (And) the best response to this (legitimate!) criticism is to allow time for free creative expression either with or without *systeme-D*, but only after they have had sufficient practice with their task-oriented exercises”.

E-mailing is another innovative way of teaching and / or learning writing. It has become the most efficient in terms of time, effort and cost in corresponding and it is becoming widely used. Moreover, many web engines, private and governmental organizations provide free, for-life e-mail accounts.

4.4 The Role of the Teacher:

Kleifgen (1989) has observed that computers help students to achieve academic success, but the best improvements in language and literacy have occurred in the classrooms of skilled teachers. Skilled teachers provide pedagogical choices that encourage productive classroom interaction and engagement in tasks that are challenging to all students.

Rejecting the notion of a dual curriculum that provides cognitively challenging tasks for advanced students and rote learning for struggling students, effective teachers use computers to provide appropriate learning environments for students, choose appropriate software and take an active role in teaching children how to use computers for individual and collaborative learning.

4.5 Factors Contributing to Development of Language and Literacy Skills:

- Cognitively challenging software, including software for text construction and exchange.
- Collaborative learning environments where task-based and problem-solving activities are predominant;
- Skilled teachers who provide challenging tasks for all students depending on his/her knowledge of their age, proficiency, prior experience, etc.
- Availability of updated hardware and software.

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