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One and All in CALL? Student - Moderator - Researcher

1. INTRODUCTION

In this article I focus on a research study that is situated in a collaborative learning setting in the context of a computer assisted foreign language teacher training class in a German university. The context of the research can be defined by the following factors: 1) the significance of modern technology 2) the impact of foreign languages as an important vehicle traveling the global world 3) the promising effects of computer assisted language learning 4) the specialty of the campus and 5) the theory and practice of a cooperative model, the LMR plus Model.

The LMR-plus Model is a method employed at the university level mainly with all teachers in training to be EFL instructors. It has been developed and influenced by my own research on the one hand and practical experience in the school and university setting on the other hand.

Having explained the model I am going to portray a pilot study which was conducted in a seminar on CALL at Kassel University in summer 2000. Right at the beginning of the semester, I conducted a survey among the participants, focusing specifically on questions concerning attitudes and values with respect to CALL and cooperative learning (see Finkbeiner, 2001). Additionally to this, EFL students attending other seminars were asked to participate in the research. The majority of these students were more advanced and thus, had already participated in CALL classes and also experienced the LMR plus Triangle of cooperative learning before. Taking consideration of the special characteristics of Kassel campus and with reference to the data collected exemplary results will be given.

2. The Significance of Modern Technology for Learning

When Gutenberg published the first bible printed by movable metal type in 1457 this enhanced world wide literacy development most profoundly. It was considered one of the

most significant educational challenges worldwide. Books became more accessible and affordable to everyone. This idea has been taken up by Michael Hart in 1971 who implemented into a computer based project: the Project Gutenberg (cf. Anderson-Immun 1998, p. 680). The information highway is in the process of transforming our learning culture and daily life as dramatically as Gutenberg's press did in the middle ages.

The eLearning-conference and –exhibition in London in 2001, for example, which is organized on the highest European level proves the relevance of the topic in a European dimension (Finkbeiner 1995). Even the most severe media scepticists have to give consideration to the fact that the so-called global village, predicted by Marshall Mc Luhan in 1962 has become a reality long since then.

Even though this sounds promising it makes people nervous. In the CALL class that will be described in more detail further below the majority of the students attributed a handwritten letter as “personal”, “warm” and “individual” whereas they identified e-mail as rather “impersonal”, “nothing to hold in your hands in” and therefore “just not as nice”. There is the existential fear that the computer might make people withdraw from the primary experiences of the physical world and just live vicariously through their computers.

Another fear is that there will be a paradigm switch in thinking and learning which metaphorically can be labelled as “From *Cogito ergo sum* to *I am, therefore I surf*“. That this fear is neglectable as cognition is not substituted but rather challenged in a more differentiated way is proved by several empirical studies conducted by the OECD (1998). These studies show that those learners are successful at school that are not only print competent but also computer competent.

Thus, the demands as to the profile of a future oriented teacher qualification have changed most profoundly. According to this, computer competence as a global goal has been implemented into all curricula of the 16 federal German states.

3. The Impact of Foreign Languages as an Important Vehicle Traveling the Global World

Next to computer competence there is high importance on foreign languages in general and on English in particular in the contemporary German setting. The current importance on languages is directly related to a frame work which can be labeled as the European dimension of foreign language teaching (Finkbeiner 1995).

There is no doubt that English as the *lingua franca* plays the most important role in that setting. English has become the most important language in business, industry, commerce,

trade, for publication, and in all computer related fields. As a result, in 1998/99 according to the Statistisches Bundesamt of Germany (2000) 6.266.657 students were learning English as a foreign language in Germany.

Additionally to this, other languages have to be taught. With a population of more than 320 million people Europe has become the biggest labor market in the world. This market is potentially open to each European. In order to make use of these new chances people have to become more mobile, both in their thinking and in their language proficiencies.

The Common European Framework of Reference for Language Learning and Teaching demands a higher level of flexibility for the European educational institutions. The aim is multilingual comprehension which means that people in Europe can understand each other's languages, independent of their educational level: an ambitious desire which is, nevertheless, more easily achievable by the usage of computers in foreign language education. In promoting individual learning, the computer might be able to manage to eliminate individual learning deficits. This is only possible, if future learning programmes have interactive tutorial elements.

4. Computer Assisted Language Learning

The term computer assisted language learning consists of three components: computer, language and learning. I want to focus on the language part here. Language is closely linked to *literacy* development. Nadin (1997) talks about the end of the era Gutenberg and the beginning of the civilization of *illiteracy*. According to this the digital media have led to thinking and working beyond natural language. It is seen as one of the most important cultural tasks "to think in media other than language" (ibid.: 713). Thus, literacy in terms of books, philosophy and ethics would be substituted by efficiency. Hence, our society could no longer afford to indulge in a literate education but rather had to free itself from literacy and focus on nonverbal design (ibid.: 590).

Even though this viewpoint sounds interesting (rather than speaking of a substitutional process) one ought to speak of a complementary process: As a consequence we have to learn to think both in media *and* in language. Thus, instead of giving up the notion of literacy in education, I want to advocate a redefinition of that term. This re-definition coincides with the more recent use of literacy which has been extended from its original connection with reading and literature to any body of knowledge. Within that concept which is based on Gardner's (1985) model of multiple intelligence and thus, includes 7 different forms of literacy the term of technological literacy is relevant in this context.

It is most urgent in looking at the future world that in-service and pre-service teachers develop technological literacy which allows them to facilitate the mediation of that kind of literacy. Technological literacy has to do with the retrieving, analyzing, and evaluating of texts which the computer helps us to produce, manipulate and distribute to an extent nobody would have ever anticipated. These texts are electronic texts, which means they are adaptable, impermanent, easily replicated, disseminated and stored on a grand scale.

The following seven characteristics can be identified as typical for electronic texts (Anderson-Imman 1998, p. 679f.): modifiable, enhanceable, programmable, linkable, searchable, collapsible, collaborative. These various functions of electronic texts show that e-texts are an important vehicle for enhancing literacy and that this will have a great impact on education. Electronic reading and writing eliminates the constraints of distance, enabling students and teachers from any part of the world to work with materials once available to only a select few; it, furthermore, allows one to cooperate and use language in an authentic way which means communicating with anyone anywhere at any time. Ease of access, combined with flexibility of use, has given electronic texts a prominence that it seems indeed to be the medium of the future.

This very much correlates with the model of Rüschoff & Wolff (1999: 51). According to them course book orientated English teaching has to be changed completely. Their model of the future English classroom is mainly based on constructional elements and includes an action- and project-orientated, communicative EFL-classroom (see Finkbeiner 2000) with as many authentic materials as possible (Wolff & Rüschoff 1999: 61). The new media provide a variety of possibilities to achieve a more authentic English lesson. This allows genuine and real communicative action to happen which is based upon genuine communication desires (ibid.: 60). Rüschoff & Wolff add that in order to implement this constructivism-based model, research on new possibilities on the further integration of the computer into the EFL-classroom has to be conducted.

In addition, computer assisted language learning has to be implemented into the general teacher training programs at the universities and continuously become part of the students' experience qualifying for a degree as an EFL teacher. In the following I am going to describe how that approach was implemented on campus together with a cooperative learning approach.

5. The Kassel Campus

Kassel University has 18.000 students, 800 of whom study in the English department. Depending on the intended degree the students study either English for the primary school level, for the secondary level I or II, for the vocational school level, for an MA degree or a diploma in business. Two thirds of them study to become a teacher in a particular profile.

Teacher education at the Kassel University follows an approach of research assisted teaching and learning and of constant interconnection between theory and practice. We believe that teaching a foreign language successfully requires teaching it in the target language itself. Thus, English is our official classroom language which includes papers being written in English. In this context it becomes clear that both cooperative learning and computer learning offer good opportunities for our students not only to practice their teaching and learning strategies but also to practice the foreign language in small groups. This allows them to develop and grow into their future profession. I am now going to elucidate the model that follows and integrates that cooperative approach.]]]

6. The LMR plus Model of Cooperative Foreign Language Learning

The LMR plus model regards each participant of the CALL-classroom (as well as any other classroom) as one and all: learner - moderator – researcher (see Legutke 1998). This in turn supports the idea of life-long learning, which represents a substantial necessity of CALL, since technological development has not reached its peak yet and the shelf life of knowledge continuously seems to decrease.

The LMR plus model orients on Legutke (1998) who points out to the necessity of a teacher having to be considered as a learner as well as a researcher. Yet, whereas Legutke's main focus is on the teacher in his changing roles, the LMR-plus model focuses on the aspect of the cooperative and collaborative process between teacher, learner and researcher in a setting in which not only changing but inter-changeable roles are taken as a starting point. In this setting the idea of the development of expertise plays a major role.¹

6.1 The underlying theories of the LMR plus Model

The LMR plus model focuses on higher mental functions to be developed through social interaction (Vygotski 1962, 1978, 1982, 1983). This is based on the assumption that higher

¹ A more detailed description of the model with practical examples on how to implement it is given in Finkbeiner 2001. There you will find more information on how to form groups, on group liabilities and group commitments, on challenges and problems of the model and on the issue of expertise.

mental processes are socially or culturally mediated. This links up to an approach that was first set by the reform pedagogues and has now been re-established and adapted integrating both the aspect of the neurological capacity of mankind and the paradigm of holistic, action-oriented learning (Finkbeiner 1995, 2000, Rüschoff & Wolff 1999).

Higher order thinking as proposed in Vygotski's theory on the zone of proximal development has also been implemented into Cohen's model of Complex instruction (Cohen 1995, 1997). The most important factors are 1) creation of equal-status interaction in heterogeneous classrooms (Cohen & Lotan 1997) 2) diversity and groupwork with a special focus on teaching strategies and skill building (Cohen 1994) 3) the role of teachers' qualification and profession training in cooperative learning (Brody & Davidson 1998).

6.2 What does LMR mean?

The LMR-plus model has got an L, an M and an R. L stands for learner, M stands for moderator or teacher and R stands for researcher. In order for the model to function, certain competencies have to be acquired. As there are three different roles there are at least three different sets of competencies.

table 2: LMR-Triangleplus....ppt

6.3 L as in Learner

As a learner one needs to develop and acquire a set of competencies which consists of learning strategies, learning techniques and learning awareness. This includes declarative, procedural and situational knowledge as well as the appropriate use of strategies and learning techniques (see Garner 1987). In the case of CALL learners have to acquire the knowledge to make the computer their tool to cooperate with others via or on e-texts they critically select, design or adapt. As far as learning awareness is concerned it is important that learners are encouraged to reflect on their own learning process. In this respect it is very helpful to collect empirical data. Next to gaining insight into students' minds and attitudes the students themselves gain a bigger insight into their own thinking and learning processes.

6.4 M as in Moderator

Being a moderator one needs organizational skills, as well as presentation and moderation strategies (see O'Malley & Chamot 1990). Thus, a moderator's competence includes meta-cognitive, cognitive and socio-affective strategies. A moderator ought not only apply such

techniques but at the same time develop an awareness about them. This allows him or her to revise his or her theories on moderating and teaching groups. As far as the presentation strategies are concerned the profile also contains competencies such as a moderation as well as a media competence.

As the success of the CALL class is extremely dependent on the functioning of the technology on the one hand and on the computer know-how of the group on the other hand, it is worth while setting up a whole team of moderators including tutorial help. Thus, team moderation is an immanent feature of the LMR plus model.

6.5 R as in Researcher

Being a researcher one needs to know about how to observe phenomena or people, how to measure things, how to collect data, how to use diagnostic instruments, how to define research constructs, how to find information on a research construct, how to use books, libraries, the internet, data banks etc. and how to proceed with data, how to implement research questions and how to evaluate results. Thus, a researcher's profile contains an elaborate diagnostic competence, the ability to develop and use tests and items, the respect for certain standards as formulated and agreed upon by the scientific community, such as consideration of validity and reliability of research results and the respect for certain test standards.

6.6 LMR as in Learner, Moderator and Researcher

Being a member of an LMR group one has to acknowledge the different roles and the expertise of everybody cooperating as a partner on an equal basis. For teachers or professors this means to adopt quite a difficult role which includes the capacity to learn to let go, to learn that they might be novices in certain fields whereas their students might be the experts. This requires a particular understanding about and perception of oneself, about the other and the group as well as a certain attitude that allows for cooperative and collaborative learning. Thus, each participant has to develop a differentiated set of competencies depending of the situation specific role one holds at the very moment of learning.

6.7 And what is the Plus in the Model all about?

The plus refers to the fact that we use foreign language as a vehicle for classroom communication. Using a foreign language involves knowledge about a different culture,

empathy for others, the capacity to change perspectives, to see the world through the other person's eyes, the power to negotiate and give critical yet constructive feed-back to peers.

7. Overview of the study

In order to elucidate both effects but also problems in implementing computer assisted language learning in a synergetic approach together with the LMR plus model I am now going to refer to an exemplary selection of data. The data is part of a larger pilot. The data I refer to have to be acknowledged as exploratory data so far.

7.1 Setting and Sample

Within the CALL study there are two major parts: a qualitative study and a survey study conducted with the help of a questionnaire. In this report I will focus on the survey study. The data of that part of the systematic pilot study were collected on Kassel campus, Germany at the beginning of the summer semester 2000. The main idea was to collect data on students' attitude and interest in CALL and cooperative learning.

Four testers administered a questionnaire to about 100 EFL students. As the survey was conducted on campus the questionnaires could be returned directly to the testers. Four different EFL classes formed the main sample. The sampling and method for distribution of questionnaires was the same for all four classes. No incentives were given to complete the questionnaire. From the 100 questionnaires handed out 82 were returned. The 82 EFL students who returned the questionnaires attended classes on the following topics : a) Computer Assisted Language Learning, b) Teacher as a Researcher c) English Teaching Methodology d) Intercultural Learning.

The 82 questionnaires constitute the main sample of this study. 27 of the respondents were male and 52 female students. This corresponds with the gender proportion of one third male and two thirds female students in the language department on Kassel campus. There was a wide age range between 19 and 37 years, yet the majority was between 20 and 21. The average age was 23 years. The vast majority was speaking German as their native language, only four students had different mother tongues. For a majority of 88% English was the first foreign language. Most students were in their fifth semester. 40% named English as their major. About half of the students were qualifying for a teacher's degree (n=39), 7 for a diploma, 2 for an MA, 13 did not give respond to the item of the intended degree.

7.2 Questionnaire

The questionnaire was developed by the author as main investigator on the basis of research conducted by Finkbeiner (1995), Huber (1998), Bürgel (1999) and Heinzmann (1999). It contained 11 items as to biographical data and 86 items about negative and positive responses to CALL and cooperative learning. The questionnaire sought data about students' attitudes, experience and concrete behavior in different situations concerning CALL and cooperation. Because of the possible effect of social desirability only very short information was included on the questionnaire. The scale on which responses to the questions could be given was a four point scale. It included the following options: "I agree strongly", "I agree", "I disagree" and "I disagree strongly". Responses were coded in order of an increasing amount of agreement from 1 to 4. Additionally to this items about the frequency of the use of computer applications were implemented into the questionnaire. These items 87 to 101 were adapted from Bürgel (1999). The scale for the items 87 to 101 was a six scale. It had the following options: "in each EFL lesson", "once a week", "once a month", "hardly ever", "never", "I do not know that application". The questionnaire was complemented with four open questions. The answers to the four questions were transcribed, text analyses were conducted and categories were formed.

7.3 Evaluation of the questionnaires

For the evaluation of the data the following sub groups were formed: CALL Beginners and CALL Non-Begin, ALL Male and ALL Female.

The first focus in the evaluation of the data was to first of all get a survey about EFL students' attitude in the field described. A second focus was to find out whether there were significant differences between the students of the CALL Begin group versus CALL Non-Begin in order to see probable effects of the Call program in connection with the cooperative practice employed.

As for all Call Classes the goals were: a) to improve the students' computer skills as well as introducing them to the theoretical background of modern media and teaching methodology b) to build up an awareness for and establish a competence in the students' multi-faceted role of being a student, a moderator and a researcher c) to enhance their growth in their future profession.

The third main focus of the study was on the gender issue. The question was whether there were significant differences between male student and female students irrespectively of the course they attended.

The raw data were edited in dbase data.² The following statistics were calculated with SPSS³: descriptive statistics (frequencies and mean values), multivariate analyses (factor analyses), correlation analyses and Student's t-Test.

7.4 Results – Computer Expertise of the Respondents

The computer experience varied for the whole sample of 82 respondents between a range of two months and 18 years. This range was mirrored in all four samples. This, of course, shows how challenging it was to find adequate tasks for everybody in the CALL class as there was a range of students participating from being a real expert to being an absolute novice. Yet, the staff situation on our campus at the time of the survey up to now has not allowed for CALL courses to be offered in different proficiency levels.

The question about where the respondents first learned about computers was surprising as there was a high proportion on home learning: out of 82 students 34 had learned about computers at home, 22 at school and only 5 at university. Only a few had received instructions at introduction courses, at adult education centers (VHS) or from friends. Seven people did not answer this question at all.

The students were asked to assess their computer skills according to the following levels: *unsatisfactory*, *satisfactory*, *good* and *very good*. 49% regarded their computer skills as satisfactory, 23% as good, 11% as unsatisfactory and 10% as very good. 7% could not decide on that issue. 80 of the 82 students participating in the survey had their own computer at home. Even though the age of the computers varied between 1 month up to 7 years, the average age of the private computers was about two years.

7.5 Results – Frequencies

The data presented and quoted in the following have been selected under two aspects: a) topical relevance and b) statistical significance with regard to the sample examined. I am first going to refer to carefully selected data of the main sample (n = 82).

² I thank Corinna Horn, Kassel University for editing the data with Dbase.

³ I owe thanks to Dr. Gerhard W. Schnaitmann, Stuttgart University for his support in the statistical analyses with SPSS.

Computers and educational institutions: Items 17, 18, 19, 25 and 27 were used as indicators for the estimated importance of computers with regard to the different educational institutions and levels.

Tab. 2: Items 17, 18, 19, 25 and 27.

Computers are most important for learning in....

	item 17: ...secondary schools	item 18: ...primary schools	item 19: ...university	item 25: ...maths, physics, comp. science	item 27: ...vocational schools
Mean values	2,51*	2,11*	3,09*	2,71*	2,41*
Highest Frequency	<i>I agree</i>	<i>I disagree</i>	<i>I agree</i>	<i>I agree</i>	<i>I disagree</i>
number of students who said this	39	53	39	43	45
percentage	48%	65%	48%	52%	55%

*1 = disagree strongly, 2 = I disagree, 3 = I agree, 4 = I agree strongly

Table 2 shows that more than half (52%) out of the 82 respondents that answered that questionnaire agreed that computers were important for learning subjects such as maths, physics and computer science. As far as the different educational institutions were concerned there was the highest agreement on the importance of computers for universities (mean value: 3.09), followed by secondary schools (mean value: 2.51). This agreement was not shared with regard to the importance of computers for vocational schools (mean value: 2.41) and primary schools (mean value: 2.11). More than half of all respondents rather disagreed with that statement in connection with these two educational institutions. There is a significant difference in the mean values of primary schools in contrast to secondary schools. One can conclude, that the respondents of this study shared the belief that the importance of computers used in schools grew with age, and also with educational level. This replicates the results of Bürgel's study (1999).

Computers and foreign language learning: Items 33, 43, 66, 81 and 84 were used as indicators for the importance of computers for foreign language learning.

Table 3: Importance of computers for foreign language learning

	item 33: <i>Each EFL student should participate and qualify in CALL courses</i>	item 43: <i>The computer is an important tool for my student's foreign language learning</i>	item 66: <i>I think the possibilities for CALL at school are/will be sufficient</i>	item 81: <i>Each EFL teacher should participate and qualify in CALL courses</i>	item 84: <i>I think CALL is a necessity. Each university should offer it.</i>
Means	2,65*	2,53*	2,35*	2,96*	3,03*
Highest frequency	<i>I agree</i>	<i>I agree</i>	<i>I agree</i>	<i>I agree</i>	<i>I agree</i>
Number agreeing	48	43	39	55	54
this is a percentage of...	59%	52%	48%	67%	66%

*1 = disagree strongly, 2 = I disagree, 3 = I agree, 4 = I agree strongly

The amount of agreement concerning the importance of the computer for foreign language learning is convincingly high for all items used as an indicator for that. It is obvious that most of the respondents believe that Computer Assisted Foreign Language Learning is useful and needed, no matter where the language learning takes place. It should be offered on a large scale in schools and in universities and be implemented into all foreign language teacher training programs. The highest agreement is with regard to universities qualifying teachers in CALL (mean value: 3.03). Yet, the results of items 33, 43, 81 and 84 show a discrepancy to the correlation of the importance of computers and school level and age as described above. Considering the fact that primary school foreign language learning plays a more and more important role in the German educational system a revision of the subjective theories of the foreign language teacher students is necessary, thus allowing the use of computers also in early foreign language learning.

Frequency of computer use in the different educational levels: Items 94, 95, 96, 97, 98, 99 and 100 were used as indicators for the frequency of computers used in the different educational levels.

Table 4: How often would you use the computer for the following age groups?

	Item 94: <i>Kinder-</i>	item 95: <i>Primary</i>	item 96: <i>secondary</i>	item 97: <i>Secondary</i>	item 98: <i>Secondary</i>	item 99: <i>University</i>	item 100: <i>Vocational</i>
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	<i>garten, Pre-school</i>	<i>school: Grade 1-4</i>	<i>school: Grade 5-6</i>	<i>school: Grade 7-10</i>	<i>school: 11-13</i>		<i>school</i>
Highest mean value	Hardly ever	Once a month	Once a week	Once a week	Once a week	Once a week	Once a week

The items used as indicators for the frequency of computer use in the different school levels correlate with the items used as indicators for the importance of the computer in these levels. The highest percentage of all respondents answered that they would hardly ever use the computer in kindergarten or pre-school. Again the highest percentage of all respondents would use the computer in primary school once a month, in secondary school grade 5-13 once a week as well as in university and vocational once a week. With the exception of the relevance of the computer in the pre-school and primary level this mirrors a very undifferentiated picture of the highest percentage of all respondents with regard to the question of frequency of computer use. There is a contradiction to the tendency expressed before that the higher the level the more the estimated importance of computer use. Thus, one would have expected more frequent use of the computer in the university level and also in secondary level grade 11-13.

Use of computer applications: Items number 87 to 100 were used as indicators for the actual importance of different applications in EFL Classrooms.

Table 4: Which computer application would you use as a teacher in the EFL Classroom?

	item 87: <i>CD-ROM</i>	item 88: <i>Internet</i>	item 89: <i>E-mail</i>	item 90: <i>news-groups</i>	item 91: <i>chat rooms</i>	item 92: <i>Creating web-pages</i>	item 93: <i>Desktop publishing</i>
Means	Once a week	Once a week	Once a week	Once a month	Once a month	hardly ever	hardly ever

The applications the respondents would use once a week were Internet, E-mail and CD-ROMs. Newsgroups and chat rooms were only rated once a month by the majority of the respondents and creating web pages as well as desktop publishing were rated most within the category hardly ever. It has to be mentioned that 6 out of 82 respondents did not know the application creating web pages, and furthermore, 23 out of 82 respondents did not know the application desktop publishing. This of course, might be the main reason why they would not use it as teachers.

7.6 Results: Student's t-Tests for CALL Begin versus CALL Non-Begin

Self esteemed Expertise: Item 3: "I have a clear idea about what computer assisted language learning is" and Item 4: "I have experienced cooperative learning and teaching in my studies". These items were used as indicators for the status quo at the beginning of the CALL course as far as the self-esteemed CALL and cooperative practice expertise of the two subgroups was concerned. The Student's t-test reveals significant differences between the mean value of the two groups for item 3 and most significant differences for item 4:

Item 3: Mean CALL Begin: 1.97/CALL Non-Begin: 2.26; t-Value: 1.972 ; 2-Tail Prob. 0.052

Item 4: Mean CALL Begin: 2.29/CALL Non-Begin: 2.72; t-Value: 2.29; 2-Tail Prob. 0.009

The CALL Non-Begin obviously were the more proficient group both as far as the self-esteem concerning CALL as well as cooperative practice were concerned. This also shows that particularly those students attended the CALL class that really felt the need of acquiring basic knowledge in that field. Items 3 and 4 are very important for the interpretation of the following data.

CALL and cooperative learning: Items 22, 28, 39, 52 and 85 were used as indicators in order to find out about the basic attitudes concerning cooperative practice in general and cooperative practice and CALL in particular. This construct was implemented as follows: Item 22 "As team work takes so much time teachers should not bother so much about it", item 28 "Computers make cooperative and collaborative learning very difficult", item 39 "I would like to know and learn more about how to use cooperative learning in CALL", item 52 "For me CALL and cooperative learning seem to be incompatible" and item 85 "I accept my students being experts and learning from them in fields I am not".

Item 22: Mean CALL Begin: 2.35/CALL Non-Begin: 1.91; t-Value: 2.90; 2-Tail Prob. 0.005

The difference between the mean values of the CALL Begin and the CALL Non-Begin group responding to the statement, that teachers should not bother so much about team work as it takes so much time, was most significant. Whereas the CALL Non-Begin group was quite divided with a slight majority tending to negate that statement the majority of the CALL Begin group went conform with that.

The attitude towards cooperative learning in a computer based learning environment can be summed up as still being regarded with scepticism in both groups. More than half of all respondents believe that computers make cooperative and collaborative learning very difficult. Yet, the apprehension as to the issue of a cooperative practice in a computer based

learning environment is a lot stronger among the respondents of the CALL Begin group. The difference in the mean values between the two groups is most significant.

Item 28: Mean CALL Begin: 2.69/CALL Non-Begin: 2.36; t-Value: 2.09; 2-Tail Prob. 0.039

The as rather difficult evaluated situation of computer based learning does not lead to ignorant behaviour as the results of item 39 clearly prove. In both groups the majority of the respondents would like to know and learn more about how to use cooperative learning in CALL. Whereas in the CALL Begin group nearly two thirds are interested in learning about cooperative computer based practice in the CALL Non-Begin group it is nearly the whole group. Thus, there is a most significant difference in the mean values between the two groups with the Call Non-Begin group showing an even more straight forward interest in that issue.

Item 39: Mean CALL Begin: 2.80/CALL Non-Begin: 3.49; t-Value: 4.93; 2-Tail Prob. 0.000

The results of item 39 ought to be taken seriously as they express the respondents' real need of wanting to learn more about cooperative practice and computer learning. That this is a real challenge and necessity in the context of foreign language teacher qualification can be deduced from the results concerning item 52. Particularly within the CALL Begin group a majority agreed with the statement that CALL and cooperative learning seemed to be incompatible. Within the Call Non-Begin group the majority disagreed with the statement concerning the incompatibility. The Student's t-Test reveals most significant differences between the mean values of the CALL Begin group versus the CALL Non-Begin group.

Item 52: Mean CALL Begin: 2.26/CALL Non-Begin: 1.76; t-Value: 3.654; 2-Tail Prob. 0.000

Finally, cooperative learning as described in the LMR plus model is closely connected to the notion of expertise. Particularly in the field of computers it is no surprise at all that students very often are the real experts and know a lot more in this field than maybe their teachers. The statement "I accept my students being experts and learning from them in fields I am not" links up to that. It found a huge majority in both groups, but again the CALL Non-Begin group mirrored the agreement in a more convincing way. The Student's t-test reveals significant differences between the mean values of the two groups for this item.

Item 85: Mean CALL Begin: 3.03/CALL Non-Begin: 3.34; t-Value: 2.29 ; 2-Tail Prob. 0.024

Computers and attributions: Item 46 "Computers contribute to hyper-activity, nervousness and anxiety" and item 51 "Computers no longer allow children to make primary experiences" were used as indicators to find out about attributions made to the computer as far as its effect a pedagogically sound and healthy learning environment is concerned. Whereas within the Call Non-Begin group the majority of the respondents did not agree with the statement that "computers contribute to hyper-activity, nervousness and anxiety", the majority of the

respondents of the CALL Begin group did. The difference in the mean values of the Call Begin versus the CALL Non-Begin group according to the Student's t-Test was most significant.

Item 46: Mean CALL Begin: 2.47/CALL Non-Begin: 1.85; t-Value: 3.654; 2-Tail Prob. 0.000

This attribution as to the probable negative effects the computer might cause in children was mirrored in an analogous way in the response to the statement that "computers no longer allow children to make primary experiences". Whereas the CALL Non-Begin group was divided as to that issue the three quarters of the CALL Begin group were convinced that this was true. The Student's t-test reveals most significant differences in the mean values for both groups.

Item 51: Mean CALL Begin: 3.0/CALL Non-Begin: 1.96; t-Value: 5.974; 2-Tail Prob. 0.000

7.7 Student's t-Tests - CALL Begin Male versus CALL Begin Female

The report will be completed with an analysis of the data collected in the study with special regard to the gender issue. This is due to the fact that another study conducted on cooperative learning (Finkbeiner 2001) proved that the female students participating in that study had another approach and attitude towards cooperative learning than the male students did. Thus, it is a very important factor investigating. Possible problems in cooperative work could be caused by the discrepancy of conflicting subjective theories of boys and girls or women and men as to cooperative practice. This difference between male and female students could be expected even higher when connected to CALL issues. It could have harmful effects on the learners' CALL biographies.

Additionally to this power and status problems are connected to the different perceptions and attributions paid to cooperative practice in CALL by men or women. If not regulated it, for example, could have the effect that with a high probability in computer pair work male students would tend to take over the control of the mouse and the keyboard than female students. In the following the Student's t-Test was calculated for the CALL Begin sample.

Use of computers: Items 13, 14 and 30 were used as indicators for the preferred computer use. Item 13 "I use computers mainly for computer games", item 14 "I use the computer mainly for my studies" and item 30 "The computer is a tool for my own foreign language learning". Items 92 and 93 focussed on the frequencies of computer applications such as creating web pages (item 92) and desktop publishing (item 93).

Even though the majority of both the female and male CALL Begin group use computers mainly for their studies and not for computer games, the Student's t-test still reveals significant differences for both sexes. With a significant difference in the mean values in the Student's t-Test the Call Begin Female group uses the computer less likely for computer games and more likely for studies than the CALL Begin Male group.

Item 13: Mean CALL Male: 1.74/CALL Female: 1.41; t-Value: 2.286; 2-Tail Prob. 0.025

Item 14: Mean CALL Male: 2.67/CALL Female: 3.07; t-Value: 2.393; 2-Tail Prob. 0.019

Item 30: Mean CALL Male: 2.23/CALL Female: 2.49; t-Value: 0.101; 2-Tail Prob. 1.657

Yet, there is no difference as far as the response to the use of the computer as a tool for one's own foreign language learning is concerned. Both the majority of female and male students declare that they use the computer for that aim.

With regard to the frequency of the use of computer applications such as creating web pages or desktop publishing the results discussed before proved that the majority of the respondents had rated those within the category of "hardly ever". The Student's T-Test reveals most significant differences between the mean values for male and female students here. These prove that the male students tend to use these applications from "hardly ever" to "once a month" in contrast to the female students who really only use them hardly ever .

Item 92: Mean CALL Male: 3.73/CALL Female: 3.00; t-Value: 2.779; 2-Tail Prob. 0.007

Item 93: Mean CALL Male: 3.38/CALL Female: 2.35; t-Value: 3.233; 2-Tail Prob. 0.002

Computers and CALL: Item 52 "For me CALL and cooperative learning seem to be incompatible" and item 58 "I am not interested in cooperating with others" were used as indicators for the students' attitudes towards cooperative practice in connection with CALL.

Item 52: Mean CALL Male: 2.22/CALL Female: 1.85; t-Value: 2.485; 2-Tail Prob. 0.015

Item 58: Mean CALL Male: 1.81/CALL Female: 1.54; t-Value: 2.866; 2-Tail Prob. 0.06

Even though there was no clear majority pro or contra the statement of the incompatibility of CALL and cooperative learning the CALL Begin Female group with a significant difference in the mean value compared to the CALL Begin Male showed more disagreement with that statement. Whereas the majority of the female students disagreed the majority of the male students agreed with that statement. This coincides with the tendency of the responses given to item 58. Even though the majority of both female and male students disagreed with the statement "I am not interested in cooperating with others", the Student's t-Test reveals a significant difference in the mean values for the female and the male students.

Computers and gender item 70 "I think boys are better at using the computer than girls". There was a slight majority of the CALL Begin Male agreeing with that statement. The

difference with which the CALL Begin Female group disagreed with the statement was turned out to be most significant in the Student's t-Test.

8. Discussion

The main focus of this study was to give a survey on students' attitudes, values and attributions with respect to CALL and cooperative learning within the context described above. The survey gives us both hope but also reason for action. There seems to be apprehension too big and awareness too small as to certain specific issues. It is obvious that most of the respondents believe that Computer Assisted Foreign Language Learning is useful and needed, no matter where the language learning takes place. On the other hand there is an explicit hint as to the fact that most respondents see a correlation between age and school level on the one hand and computer aptitude on the other hand. This does not pay any tribute to the relevance it should have in the primary school level. In this case the respondents do not "think in media other than language" (Nadin 1997) nor do they see the pedagogical challenge of nonverbal design particularly for early foreign language learning.

By not only asking beginners but also more advanced students as far as CALL and the LMR plus Model of cooperative learning are concerned the data collected also allowed for a deeper contrastive look as to possible effects of CALL classes held and the LMR plus Triangle of cooperative learning practiced before. The study shows that the successful use of CALL but also of the LMR plus model including a high amount of cooperative practice demands an enduring and continuing effort in implementing the approach into the everyday study life at our campus. It seems to be very difficult to see effects at the beginning when both approaches have been practiced very shortly only. Both CALL and cooperative practice demand qualitatively high input and consequent employment. The exemplary data show that the key seems to lie in a long term effort which finally ends up providing the novice teachers with a new kind of professionalism in the handling of a CALL class through processes such as the organization, planning, initiation, facilitation and evaluation of a collaborative CALL classroom.

The gender issue has turned out to be an important research topic. If male students have another approach and attitude towards CALL and a cooperative practice in CALL than female students do and nearly a hundred percent of our webmasters at schools are men, then possible problems in classroom work could be caused by the discrepancy of conflicting subjective theories of the male webmaster and his female colleagues and/or by the webmaster teaching

girls also and not exclusively boys in CALL classes. Vice versa, the same is true: If female students have another approach and attitude towards cooperative learning than male students do and more than two thirds of our teachers are women possible problems in the cooperative practice of CALL classes could be caused by the discrepancy of conflicting subjective theories of the female teacher and the male students. Additionally to this power and status problems are connected to the different perceptions and attributions paid to cooperative practice by men or women.

It has become clear that there should be a high focus on the importance of creating a high level of awareness about these issues within students: What students perceive and learn on campus is formed into perception-expectation-hypotheses. They monitor our perception and attention selectively and even though they are often unconscious, may lead to serious consequences in action. They actually influence all our future actions. If we do not most consequently implement CALL together and intertwined with a cooperative practice in our classes on campus today and make it a regular and daily practice and routine our students will not apply it tomorrow.

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