# The Effect of Age and Gender on High School Students' Attitudes towards Using Computers in the Foreign Language Classroom

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**Abstract**: *This study explores the views of Jordanian high school students on using computers in the English classroom. It focuses on the effect of age and gender on their attitudes towards this technology. The data were collected from 10 public high schools through questionnaires and structured interviews. The results show that the participants tend to have positive perception of the computer use for general purposes and for learning English but with various degrees depending on their age and gender. The older learners seem to be more interested in the general applications of the computer while the younger ones tend to be more excited about its implementation in English lessons. On the other hand, gender appears to have slight influence on their responses to the computer use in the two domains. These results have implications for decision makers in foreign language education.*

## 1. Introduction

Research shows that computer assisted language learning (CALL) has a lot of potential for enhancing language learning. It can increase the learners' self-esteem, language proficiency and academic skills (e.g. Dunkel 1990; Alsouqi 2001; Yasin 2002; Ates, Altunay and Altun 2006; Almekhlafi 2006). It can also develop language students' capabilities through increasing their autonomy, providing immediate feedback and simulating real world situations (e.g. Hoffman 1995; Matsumura and Hann 2004; Lim and Shen 2006; Yang and Chen 2007; Varank 2007; Akbulut 2008). In addition, it can contribute to the different forms of distance education through the Internet and multimedia (e.g. Rüschoff 1993; Yang 2001; Al-Jarf 2007a, b).

Studies on incorporating CALL modalities in foreign language instruction at the tertiary level indicate that its efficiency is influenced by the learners' attitudes towards computers (e.g. Beauvoius and Eledge 1996; Schcolnik and Kol 1999; Mustafa 2001; Ayres 2002; Shang 2005; Lim and Shen 2006; Al Senaidi 2008). Findings show that, broadly speaking, university students tend to have positive views on integrating this technology in learning a foreign or a second language (L2), and they seem to use it for various academic tasks to improve their language skills.

Recently, more attention has been given to school students' perception of CALL (e.g. Houtz and Gupta 2001; Parks, Hout, Harmers and Lemonnier 2003; Almekhlafi 2006; Ates, Altunay and Altun 2006; Yang and Chen 2006; Bovée, Voogt and Meelissen 2007; Rumpagaporn 2007). Results suggest that school

students seem to enjoy using the computer in the language classroom and to believe that it increases their learning opportunities.

The present study reports on Jordanian public school students' responses to an initial attempt to integrate CALL into the English curriculum. It concentrates on the effect of age and gender on their attitudes towards introducing computers to English as a foreign language (EFL) classrooms. Besides adding to the relatively sparse literature on CALL at the high school level, the results could be of a potential value for educators in Jordan and other developing countries with regard to incorporating computers in high school L2 curricula.

Attitude is defined by Dusick (1998) as "an evaluative disposition based upon cognition, effective reactions, behavior intentions and past behaviors which can influence future cognition, effective responses, intentions, and behaviors" (p 127). Attitude as a factor influencing the efficiency of using CALL in the EFL classroom has attracted the attention of many scholars. Research on the issue has focused on university students (e.g. Beauvoius and Eledge 1996; Dusick 1998; Schcolnik and Kol, 1999; Mustafa, 2001; Yang, 2001; Ayres, 2002; Kung and Chuo 2002; Shang 2005; Lim and Shen 2006; Al Senaidi 2008). For example, Schcolnik and Kol (1999) investigated L2 learners' views on using the computer for giving oral presentations and reported that they found it very helpful in this respect. More recently, Shang (2005) explored his students' feelings about integrating emails in L2 activities. The results indicated that they liked the idea, and they felt that it can improve their reading skill.

In the last decade, more attention has been given to school students' attitudes towards integrating this technology into the language lesson (e.g. Houtz and Gupta 2001; Parks, Hout, Harmers and Lemonnier 2003; Ates, Altunay and Altun 2006; Almekhlafi 2006; Yang and Chen 2006; Bovée, Voogt and Meelissen 2007; Rumpagaporn 2007). For instance, Almekhlafi (2006) examined the impact of using CALL on Emirati school boys' perception of the computer. He found that after its use, they developed positive attitudes towards this technology, perceived its effectiveness, and intended to use it in the future. Likewise, Ates, Altunay and Altun (2006) looked at Turkish students' views on CALL before and after its use. They noticed that their attitude scores increased significantly after they used it in EFL classes. Similar findings were reported by Rumpagaporn (2007) in her study on computer-based classroom learning environments in Thailand. On the other hand, Bovée, Voogt, and Meelissen (2007) addressed the factors affecting L2 learners' responses to incorporating CALL in primary and secondary schools in South Africa. They reported that their views were influenced by their computer experience and their socioeconomic class.

Attitude towards computers is affected by individual differences which can determine the learner's choices and their effectiveness; that is, achieving the desired L2 proficiency within a specific time span in an enjoyable way. Age is one factor which has been reported to play a crucial role in this regard (e.g. Comber, Colley, Hargreaves and Dorn 1997; Todman 2000; Zhang 2004; Facovicova and Prokop 2008). For instance, Comber et al (1997) found that

younger learners are more excited about computers than older ones. On the other hand, Facovicova and Prokop (2008) observed that older children tend to use it more frequently.

However, several scholars argue that the impact of age on attitudes towards computers is not significant compared to the effect of PC experience and hours of the Internet use (e.g. Bovée, Voogt and Meelissen 2007; Akbulut 2008).

Gender is another variable which is strongly connected to views on implementing computers in language learning. Research has shown that males tend to be more interested in computers than females and to use them more often (e.g. Collis 1985; Durndell and Thomson 1997; Houtz and Gupta 2001; Zhang 2004; Varank 2007). On the other hand, many studies show that the use of and the attitudes towards computers are influenced by training opportunities and personality rather than gender (e.g. Pope-Davis and Twing 1991; Meunier 1996; North and Noyes 2002; Teo 2006; Ates, Altunay and Altun 2006).

Reactions of Arab EFL students to integrating computers in L2 learning still calls for further investigation. Research on the issue has concentrated either on university students or on school teachers (Dhaif 1990; Towndrow 1997; Mustafa, 2001; Almekhlafi, 2004; Abu Samak, 2006; Albirini, 2006; AlJarf, 2007; Baniabdelrahman, Bataineh and Bataineh 2007; Al Senaidi 2008). Back in 1990, Dhaif investigated Bahraini university students' reactions to using computers for improving their EFL skills. He observed that they tend to enjoy their computer laboratory sessions for practicing their English. Mustafa (2001) explored the factors affecting using multimedia in improving the oral skills of Jordanian undergraduate students majoring in English. She noticed that using computers in this domain is influenced by the learners' academic achievement, their attitudes towards computers and their socio-economic class. More recently, Baniabdelrahman, Bataineh and Bataineh (2007) addressed university students' perception of their Internet use for general purposes and for learning English. They observed that there was a weak correlation between their views on its use in the two domains, and that such use was significantly affected by their academic level rather than their gender. On the other hand, Albirini (2006) examined Syrian EFL high school teachers' views on information and communication technology (ICT). He found that their attitudes towards this technology are positive and seem to be affected by computer competence and the cultural conditions that surround it. Likewise, Abu Samak (2006) investigated school teachers' attitudes towards CALL and reported that they correlated with their qualifications rather than their age and teaching experience.

Integrating computers in the EFL curriculum has been included in the policy of the Jordanian Ministry of Education for several years. However, the first large scale project of introducing CALL to public schools was English Interactive Online (EIO), which was funded by the World Bank for the period 2003-2007. The project is an integrated media program which aims at increasing the understanding and the efficiency of teaching and learning English as a foreign language. It provides the design, development and deployment of an

online EFL curriculum for grades 7-12. It also delivers lesson plans and processing tools that assist teachers in using the material efficiently.

As far as the researcher is aware, few studies were conducted on Jordanian L2 learners' use of computers at school (Alsouqi 2001; Yasin 2002; Cisco 2006). For instance, Alsouqi (2001) looked at the impact of integrating CALL in teaching L2 composition to 10th grade students in private schools. He found that it had a significant influence on their writing performance. Also, Yasin (2002) examined the effect of its implementation in teaching English to second graders. His results revealed that its use, along with the traditional methods, enhanced L2 learning. More recently, the preliminary findings of the (EIO) pre-pilot evaluation of the 7th graders' achievement in English indicated that the experimental group performed slightly better than the control group (Cisco, 2006).

## 2. The Study

It is clear that these studies were basically concerned only with the effect of CALL on improving a particular EFL skill in a specific grade. This study investigates Jordanian high school students' perception of introducing computers to the EFL classroom, and the extent to which it is affected by their age and gender.

### Questions of the study

1. What are Jordanian high school students' views on using computers for general purposes?
2. What are their attitudes towards introducing CALL to the EFL classroom?
3. To what extent are their views affected by age?
4. To what extent are their attitudes influenced by gender?

The study was conducted during 2006-2007, and it was based on the pre-pilot implementation of (EIO) which was carried out in 10 discovery high schools. In this phase, 18 units from grades (7-10) curriculum were deployed on EduWave, (5 units for grades 7and8 and 4 for 9and10). Also, two training sessions were held for (21) teachers on using the material, and for (12) supervisors on handling the professional development course. English lessons were scheduled twice a week; once in the classroom and once in the computer laboratory. The teachers depended on using the laptop and the projector because there were not enough computers for all the students.

## 3. Participants

The participants in the study were 306 students; 184 males and 122 females. They were distributed across four grades: 7th with an average age of 13, 8th with an average of 14, 9th with 15, and 10th with 16. Their number in each class ranged from 25 to 35.

It should be mentioned that the students were divided into two groups according their age; the younger learners, those in grades 7and 8 with an age

range of 13-15, and the older ones, those in grades 9 and 10, with a range of 15-17.

## 4. Methodology

The data were collected through questionnaires and structured interviews**.** The questionnaire was in Arabic and was designed adapting previous studies on the issue (e.g. Warschauer 1996; Mustafa 2001; Lim and Shen 2006; Almekhlafi 2006). Its validity was checked by a panel of EFL specialists; four professors, three supervisors, and five teachers. In its final form, the questionnaire consisted of 30 items divided into three sections. The first section has 11 items: 4 dealing with background information and 7 requiring a response on a 4 point scale regarding the familiarity with computers and their uses. The second section consisted of 10 items that had to do with the participants' attitudes towards the general application of this technology and its uses in L2 learning. These items also required a response on a 4 point scale. The third has 9 multiple choice questions dealing with the students' preferences of computer-based tasks.

It should be mentioned that the four point scale (Strongly agree, Agree, Disagree, Strongly disagree) was used instead of the five point scale including the point (Neutral) in order to encourage the students to think carefully about their response.

The reliability of the questionnaire was established by using test-retest on 31 students who were excluded from the sample, with a twenty-day interval between the two administrations. Chronbach alpha was calculated and found to be 0.82.

After establishing its validity and reliability, the questionnaire was distributed and completed during a regular English lesson.

The structured interview consisted of six open ended questions dealing with the following themes: the advantages and disadvantages of CALL, the challenges of its use, the computer-based activities enjoyed most in the English lesson, desirability of continuing to use the computer in L2 learning and aspects of its application outside the school.

The interviewees were 30 students, 18 boys and 12 girls, chosen randomly from the schools in question. They constituted 10 samples each corresponding to 10% of every class taking part in the study. After taking their permission to record their responses, the interview was conducted in Arabic then coded into English.

## 5. Data Analysis

The students' responses to the questionnaire were analyzed using SPSS focusing on their attitudes towards the computer general applications and its integration in L2 learning. Then, these were classified in terms of the respondents' age and gender. They were, in turn, compared to their answers in the interview.

## 6. Findings

The data analysis indicates that, broadly speaking, the students tend to have positive views on the computer's applications inside and outside the EFL classroom. It also suggests that their attitudes towards its use in the two domains seem to vary according to their age and gender.

The students' responses to the first part of the questionnaire showed that most of them (78%) have computers at home, and nearly all of them( 95%) use it at school, at home or at internet cafes but with various degrees depending on their age and gender. In general, the older learners tend to use it longer than the younger ones with an average of (9) hours weekly for the former compared to (6) for the latter. These differences could be due to the increase in computer-based school assignments and the decrease in parental supervision as the students grow older. These results support those reported by Fracovicova and Prokop (2008).

The responses also showed that the boys seem to use computers slightly more than the girls with an average of (7.5) hours per week for the former and (6.5) for the latter. These findings are in line with those reported in several studies (e.g. Houtz and Gupta 2001, Zhang 2004; Varank 2007).

The analysis of the participants' responses indicated that they seem to have positive feelings about using ICT for general purposes, as shown in (Table 1).

*Table 1. Students' attitudes towards using computers for general purposes*

| Statement | % Strongly agree (4) | % Agree (3) | % Disagree (2) | % Strongly Disagree (1) | M | SD |
|---|---|---|---|---|---|---|
| I enjoy using the computer to communicate with people around the world. | 51.0 | 27.1 | 12.4 | 9.5 | 3.20 | 0.989 |
| E-mails help people learn from each other. | 39.9 | 33.3 | 12.7 | 14.1 | 2.99 | 1.045 |
| Communicating through e-mail is good for improving my English. | 54.6 | 29.7 | 7.2 | 8.5 | 3.30 | 0.932 |
| Mean (Total) | | | | | 3.16 | 0.739 |

The figures in Table 1 show that the students tend to be very interested in the general applications of ICT. Most of them enjoy its use to communicate with

people around the world, with a mean of (3.2). They also think that using email improves their English, with a mean of (3.3). These results can be accounted for in terms of the computer's potential to sustain collaboration; comfort and communication (cf. Shang 2005; Yang and Chen 2006; Wu and Wang 2008).

This seems to be also the case for their views on integrating CALL in English lessons, as illustrated in (Table 2).

*Table 2. Students' attitudes towards using computers in language learning*

| Statement | % Strongly agree (4) | % Agree (3) | % Disagree (2) | % Strongly Disagree (1) | M | SD |
|---|---|---|---|---|---|---|
| I can write better essays when I do them on the computer. | 31.0 | 52.3 | 11.8 | 4.9 | 3.09 | 0.786 |
| Revising my work is a lot easier when I do it on the computer. | 48.4 | 33.0 | 12.1 | 6.5 | 3.23 | 0.903 |
| Learning by computers makes me more creative. | 57.0 | 31.1 | 7.9 | 3.9 | 3.41 | 0.799 |
| I want to continue using the computer in English classes. | 58.8 | 24.5 | 9.5 | 7.2 | 3.35 | 0.923 |
| I can learn English more independently when I use the computer. | 39.2 | 33.3 | 16.3 | 11.1 | 3.01 | 1.002 |
| I can learn English faster when I use the computer. | 46.7 | 27.1 | 12.1 | 13.7 | 3.07 | 1.067 |
| Mean (Total) | | | | | 3.08 | 0.550 |

It is clear form Table 2 that the students tend to accept introducing computers to the EFL classroom. For example, the mean for their perception that computers increase creativity is (3.41), and it is (3.35) for their desire to continue using them in the English classes. This positive trend is probably due to the individualized nature of CALL, the possibility for the learners' control and the opportunities for rapid feedback (cf. Almekhlafi 2006; Ates, Altunay and Altun 2006; Yang and Chen 2006; Rumpagaporn 2007).

However, their views on the computer applications inside and outside the classroom seem to be relatively affected by their age, as indicated in (Tables 3 and 4) below.

*Table 3. Students' attitudes towards using computers for general purposes according to age*

| Statement | 13-15 years | | 16-17 years | | T | p-value |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | | |
| I enjoy using the computer in communicating with people around the world. | 2.99 | 1.07 | 3.07 | 0.99 | 0.77 | 0.446 |
| Using e-mails helps in knowing and understanding people better. | 2.62 | 1.06 | 2.75 | 1.05 | 1.33 | 0.188 |
| Communicating through e-mails helps in learning English. | 3.09 | 1.00 | 3.04 | 0.99 | 0.55 | 0.585 |
| Total | 2.90 | 1.31 | 2.95 | 1.27 | 0.43 | 0.671 |

Table 3 suggests that the older students seem to be more interested than the younger ones in the general applications of computers, but this difference is not significant. Consider the mean for their belief that email helps in understanding people better; it is (2.75) for the former and (2.62) for the latter. This could be accounted for in terms of the older students' tendency to use computers more frequently, as suggested above (cf. Facovicova and Prokop 2008).

On the other hand, the younger children appear to be more excited about integrating CALL in the English curriculum, as illustrated in (Table 4).

Table 4 shows that there are significant differences between the attitudes of the younger and the older students towards using computers in L2 learning. For instance, the mean for the younger learner' belief that computers help in learning English faster is (2.82) while it is (2.60) for the older ones ($p < 0.03$). Also, the mean for their desire to continue using CALL in the English lesson is (3.21) but it is (2.99) for the older ones ($p < 0.016$). These variations could be due to the older students' higher interest in the general applications of ICT, which could negatively affect their feelings about its uses in education. These findings correspond to those reported by Comber et al. (1997), and Rumpagaporn (2007).

*Table 4. Students' attitudes towards introducing CALL to the EFL classroom according to age*

| Statement | 13-15 years | | 16-17 years | | T | p-value |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | | |
| I can write better essays when I do them on the computer | 3.06 | 0.90 | 3.06 | 0.83 | 0.07 | 0.946 |
| I revise my work better on the computer. | 3.08 | 0.91 | 2.94 | 1.02 | 1.63 | 0.107 |
| I feel that using computers in learning increases my creativity. | 3.18 | 0.81 | 3.17 | 0.96 | 0.14 | 0.890 |
| I would like to continue using the computer in the English lessons. | 3.21 | 0.96 | 2.99 | 1.03 | 2.45 | 0.016* |
| I learn English more independently when I use the computer. | 2.84 | 1.01 | 2.67 | 1.00 | 1.85 | 0.067 |
| I learn English faster when I use the computer. | 2.82 | 1.06 | 2.60 | 1.11 | 2.21 | 0.030* |
| Total | 3.03 | 1.07 | 2.91 | 1.13 | 2.02 | 0.045* |

Another factor that could influence the students' feelings about using computers for general purposes and for learning English is gender, as shown in (Tables 5 and 6).

*Table 5- T-test for the effect of gender on attitudes towards using computers for general purposes*

| Statement | Gender | Mean | SD | t-value | Sig. |
|---|---|---|---|---|---|
| I enjoy using the computer to communicate with people around the world. | M | 3.18 | 0.996 | -0.246 | 0.806 |
| | F | 3.21 | 0.981 | | |
| E-mail helps people learn from each other. | M | 2.88 | 1.033 | -2.272 | 0.024* |
| | F | 3.16 | 1.045 | | |
| Communicating through e-mail is good for improving my English. | M | 3.33 | 0.948 | 0.510 | 0.610 |
| | F | 3.27 | 0.909 | | |
| Mean (Total) | M | 3.13 | 0.757 | 0.958 | 0.339 |
| | F | 3.21 | 0.711 | | |

It is clear that gender does not play a significant role in the participants' views on using computers for general purposes except for emails. The mean for the girls' belief that emails help people to learn from each other is (3.16), but it is (2.88) for the boys ($p < 0.024$).

This appears to be the case for the effect of gender on the learners' reactions to integrating CALL in the English, as illustrated in (Table 6).

Table 6 indicates that, overall, the influence of gender on the students' responses to implementing computers in EFL classes is not significant. Nevertheless, the differences between the two genders are significant with regard to their perception of its effect on creativity and their desire of continuing to use it. In the first case, the mean for the girls is 3.53 and for the boys 3.33 ($p < 0.032$). In the second, it is 3.22 for the former but 3.43 for the latter ($p < 0.047$).

*Table 6 - T-test for the effect of gender on attitudes towards integrating CALL in English lessons*

| Statement | Gender | Mean | SD | t-value | Sig. |
|---|---|---|---|---|---|
| I can write better essays when I do them on the computer. | M | 3.04 | 0.871 | -1.657 | 0.099 |
| | F | 3.18 | 0.630 | | |
| Revising my work is a lot easier when I do it on the computer. | M | 3.22 | 0.940 | -0.219 | 0.827 |
| | F | 3.25 | 0.846 | | |
| Writing by hand saves time compared to using the computer. | M | 2.28 | 1.221 | -1.751 | 0.081 |
| | F | 2.52 | 1.194 | | |
| Learning by the computer makes me more creative. | M | 3.33 | 0.821 | -2.149 | 0.032* |
| | F | 3.53 | 0.752 | | |
| I want to continue using the computer in my English classes. | M | 3.43 | 0.885 | 1.991 | 0.047* |
| | F | 3.22 | 0.966 | | |
| I can learn English more independently when I use the computer. | M | 3.00 | 1.019 | -0.140 | 0.889 |
| | F | 3.02 | 0.979 | | |
| I can learn English faster when I use the computer. | M | 3.06 | 1.072 | -0.249 | 0.804 |
| | F | 3.09 | 1.065 | | |
| Mean (Total) | M | 3.05 | 0.552 | -0.990 | 0.323 |
| | F | 3.12 | 0.547 | | |

These variations in the views of males and females on the computer's applications in the two domains could be more related to training opportunities and personality rather than to gender (cf. Ates, Altunay and Altun 2006; Bovée, Voogt and Meelissen 2007; Akbulut 2008).

The participants' responses to the questions in the interview are summarized in Table 7 below. They confirm the results given in Tables 1and2 above on the students' broad interest in the general applications of computers and their use in L2 learning.

The figures in (Table 7) suggest that the interviewees, both boys and girls, tend to have mixed feelings about using the computer inside and outside the EFL classroom. They seem to have positive views on its use in the two domains and to consider it a source of enjoyment, new information, variety of learning methods and a chance for creativity. Inside the classroom, they like to use the computer for translation, answering short exams, writing essays and revising assignments. Outside school, they seem to be interested in using ICT for playing

games, corresponding via Email, surfing the Internet and chatting. The last two activities were reported more frequently by older students (cf. Tables 1and2 above).

*Table 7- Students' responses in the interview*

| Theme | Responses | Frequency |
|---|---|---|
| Positive attitudes towards CALL | New knowledge, enjoyable experience | 15 |
| | Using variety of multimedia | 10 |
| | Attract attending the class | 15 |
| | Self -study learning, increase creativity | 11 |
| | Different ways of learning | 9 |
| Negative views on CALL | Time consuming | 8 |
| | Anxiety about using computers | 8 |
| | Lack of attention during student time | 10 |
| | Lack of teacher- student interaction | 11 |
| Challenges of using CALL | Slow typing | 12 |
| | Difficulty of understanding instructions | 8 |
| | Insufficient number of computers | 15 |
| | Difficulty of reading from the screen | 9 |
| Computer-based activities enjoyed most in learning English | Translation | 15 |
| | Answering short exams | 11 |
| | Writing and revising essays | 10 |
| Desirability of continuing to use CALL | Like to use CALL in all English classes | 15 |
| | Want to use computers in most English lessons | 10 |
| | Like to use CALL in some English classes | 5 |
| Aspects of using ICT outside the school | Playing games | 15 |
| | Email, internet, chatting | 15 |

On the other hand, they complained about some negative aspects of introducing CALL to the classroom including anxiety, insufficient teacher-student interaction, not completing computer-based activities and lack of attention during the class. They also mentioned some practical challenges involved in its use in the English lesson such as the insufficient number of computers, slow typing, difficulty of reading from the screen, and incomplete understanding of instructions. The last three were reported more frequently by younger students.

The findings of this research tie in well with results reported in several recent empirical studies conducted in various parts of the world (e.g. Almekhlafi 2006; Ates, Altunay and Altun 2006; Yang and Chen 2006; Rumpagaporn 2007). At the same time, it sheds light on an important aspect of integrating CALL in the EFL school curriculum.

**7. Conclusions**

This study shows that Jordanian high school students tend to have positive attitudes towards using the computer for general purposes and towards its integration in the EFL classroom. It also suggests that their feelings about this technology are affected by their age and gender. In terms of age, the results revealed that the older learners appear to use it longer than the younger ones and to be more interested in its general applications. On the other hand, the younger students seem to be more excited about its use in learning English. In terms of gender, the findings indicate that the boys tend to spend more time than the girls in front of the screen, but this difference seems to have only a slight effect on their attitudes towards its implementation in the two domains. In addition, this study indicates that there are some practical challenges faced in using CALL in the EFL classroom, and these seem to be more common among young learners.

Obviously, this is a preliminary study with some shortcomings such as being limited to ten schools and being based on data collected only through questionnaires and interviews.

It is recommended that further research be carried out on high school students' views on CALL in Jordan and other Arab countries. It is also suggested that data from classroom observation and students' achievements in pre and post tests be included in future studies.

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