



**THE IMPACT OF COGNITIVE DIMENSION OF
TAM-PERCEIVED USEFULNESS AND PERCEIVED EASE OF USE
IN TEACHERS' ATTITUDES TOWARDS ICT'S INTEGRATION
IN TEACHING ANCIENT GREEK LANGUAGE
IN LOWER SECONDARY SCHOOL:
THE CASE OF GREECE**

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Abstract:

This study aims to delve deeper into Greek teachers' attitudes towards the use of ICT in ancient Greek teaching, in Greek public lower secondary schools, representing an attempt to identify the Cognitive Dimension of Greek teachers' of ancient Greek language (philologists) attitudes. More specifically, the main goal is to examine Perceived Ease of Use and Perceived Usefulness concerning teachers' of ancient Greek degree of familiarity with ICTs and the degree of effectiveness in ICT's integration in teaching and learning practice.

As for Perceived Ease of Use this research study investigates, in respect of teachers' attitudes:

- a) ICT's degree of personal and educational use,
- b) Self-perception degree towards ICT's use, and
- c) Degree of ability in ICT's teaching integration.

As for Perceived Usefulness this study investigates:

- a) ICT's usefulness degree in achieving learning objectives,
- b) Usefulness degree in teaching application of ICT, and
- c) ICT's effectiveness degree as for teachers' role.

Broadly speaking, the research findings reveal that teachers of ancient Greek, use ICTs to do their lesson preparation and planning, but they are not used to integrating technology in teaching practices.

Yet, Greek teachers of ancient Greek language consider -as important barrier/factor to use ICT in teaching and learning process- their lack of effective training in ICT's teaching use. As a result, they show low self-perception degree -as for ICT's use- and become more and more reluctant to adopt new technologies in teaching and

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learning procedure. Moreover, the findings stress that Greek philologists firmly believe that ICT can be used as an innovative tool of teaching and learning procedure, motivating teachers and increasing their interest in teaching approach. However, New Educational Technology is not applied in teaching practice and teachers of ancient Greek language -denied to 'escape' from traditional ways of teaching- prefer conventional/traditional teaching practices in ICT's use to modern/contemporary teaching methods, achieving mainly cognitive goals.

To sum up: a) gender, b) years of experience in teaching, c) specific knowledge in teaching ancient Greek language with ICT, and d) appropriate in-service training on ICTs have a significant impact on teachers' of ancient Greek attitudes, regarding whether or not ICT's use enhance:

- a) traditional teaching style,
- b) linguistic literacy,
- c) critical literacy,
- d) sociocultural literacy.

Keywords: ICT integration, teachers' attitudes, teaching ancient Greek language, perceived usefulness, perceived ease of use

1. Introduction

Undeniably, the worldwide proliferation of technological advancement is, historically, unprecedented and shows no signs of slowing down. ICT's tremendous changes transform our daily lives from every perspective, and the rise of technological developments has impacted on our communication, work and socialization. Therefore, in modern era, education could not remain unaffected by this exponential growth in the use of Information and Communication Technologies, whose role is crucial in the way that learning conditions need to correspond to the demands of 21st century. ICT's incorporation into classroom practice has been suggested as revolution in an outmoded educational system (Albrini, 2006). Hence, ICT's integration in the teaching and learning process has become an imperative need, a necessity in today's world, as well as new technology does have positive impact on every aspect of our lives (Tikam, 2013).

The introduction of ICT in education, like the majority of educational innovations, has revealed a constant teachers' resistance. There are many teachers unwilling to incorporate new computer technology in teaching practice (Howard and Mozejko, 2015). ICT may be seen as an innovation (Hinostroza et al., 2000), and teachers can use digital tools in educational process (Sarkar, 2012; Inan and Lowther, 2010), but ICT's integration in teaching and learning practice needs recontextualization educators' and learners' role, as well as reliable technical support for teachers (Dwyer, 1991).

More particularly, in the modern era teachers' role should be redefined, regarding their teaching methods and practices, acting as a facilitator in teaching and learning procedure, incorporating digitals tools to motivate learners, in order to

develop dynamic perception models (Flanagan and Jacobsen, 2003; Makrakis, 2002; Cobb and Steffe, 1983).

Teachers have to be involved in new ICT-based learning environment acting in a consultant role (Prawat, 1996). Hence, in the presented study, teachers' role in promoting ICT's use and integration in the teaching approach of the Ancient Greek language course is crucial, vital for the successful arrangement of the issue. ICT's usefulness and effectiveness degree are correlated with classroom practices and activities, and more especially with teachers' practices-attitudes-beliefs, and perspectives about the importance of "new innovation" in teaching process, as well as teachers' participation degree in developing ICT's policymakers (Fullan, 2007; Ma et al. 2005; Cuban, 2000; Johannesen and Eide, 2000).

Undoubtedly, ICT hold great potential for promoting social and economic changes, affecting attitudes, behaviours and beliefs, causing drastic reforms in humanities and social sciences (Yildirim, 2007). This fact brings about a new era in educational systems, turning ICT into reorienting educational practices (Singh, 2017; Makrakis, 2008).

However, Greek educational system is considered to be inflexible, unsuitable to the new changing environment, centralized, characterized by a top-down approach and introversion, encountering resistance to innovations (Maistros, 2010; Kontogiannopoulou-Polydorides, 1996; Kazamias, 1990).

2. ICT in Greek educational system

In Greece, the major priority of the National Strategy for education is firstly to accelerate the rhythm of integrating new Information and Communication Technologies (ICTs) in the educational process, and secondly to reinforce and improve the quality of teaching staff training in primary and secondary education, with emphasis on innovation and the use of ICTs.

For the achievement of these goals, there have been ran two projects "A-Level Teacher Training in ICT" and "B-Level Teacher Training in ICT".

"A-Level Teacher Training in ICT" is responsible for training teachers -of all disciplines- in learning basic ICT skills, called internationally digital literacy and in Greek terminology digital 'alphabetization'. First level training was carried out throughout Greece for a very large number of teachers (~120,000), during the 2002-2008 time period, in the framework of previous 3rd Community Structural Fund projects.

On the "B-Level Teacher Training in ICT" teachers are trained in the educational use and application of ICTs in the classroom. It is an in-service training project of 28,100 educators of Greek primary and secondary education schools in applying ICT in teaching process, and in the acquisition of skills, according to their individual educational domain for the educational use of educational software and generic IT tools.

Particularly, 27,500 teachers were certified in ICT's use in teaching practice and about 600 trained trainers graduates of Schools of Trainers for Teachers

"B-Level Teacher Training in ICT" training was started in 2007 and carried out in 2013.

The new version of in-service teacher training in ICT's integration in the teaching process is a flexible model included seminars in two different periods, called B1 and B2 level Teacher Training in ICTs. It is operated under the Operational Program "Human Resources Development, Education and Lifelong Learning" NSRF (2014-2020) co-funded by the European Social Fund (ESF) and the Greek State.

The new 'status quo' in In-Service teachers' training is a blended teaching/learning system combining distance learning and a restricted number of face-to-face meetings, based on an e-learning platform, which support synchronous and asynchronous learning (Greek School Network; In-service Training of Teachers)

3. Greek Philologists' attitudes towards ICT's use in teachings

ICT's adoption or rejection in the teaching approach of ancient Greek language course, as far as the philologists' perceptions concern, can be interpreted -regarding their attitudes- by a multivariable framework.

Many times, innovative reforms make teachers of ancient Greek language sceptical about integrating new methods in teaching and learning process, and many more when these reforms aim at reorganisation and restructuring educational procedure, as well as being designed to do radical alterations to existing educational policy. In terms of ICTs, teachers of ancient Greek language remain cautious of ICT's integration in the teaching approach and they are neutrals or positives towards the use of new technologies in classroom learning.

Firstly, it is common knowledge that School's Philosophy graduates have not been sufficiently trained in ICT's use in teaching process. School's Philosophy programs of studies offer few courses and few innovative methods in integrating new technologies into teaching-learning practice.

Moreover, philologists' training programmes in Peripheral Teacher Education Centers (PEC) do not meet teachers needs of implementing ICTs in classroom practices.

The purpose of this study is to explore the functional approach of attitudes, regarding the teachers of ancient Greek language. According to Allport (1935) attitudes are defined as "*a mental and neural state of readiness, organized through experience, exerting directive or dynamic influence upon the individual's response to all objects and situations with which it is related*", but it is proven that the most people form attitudes not only for objects-events-phenomena-persons they know, but also for issues they ignore.

The present research study seeks to conceive the way teachers of ancient Greek language form their attitudes towards ICT's integration and the motivations which make them embracing new technologies. Additionally, attitudes have a strong influence on teachers' behaviour which could be interpreted. In conclusion, it is broadly

recognized that teacher's role in Greek educational system is fundamental and therefore teachers influence the total educational process.

4. Conceptual framework

A large body of literature confirm that teachers' attitudes towards ICT are crucial factors affecting ICT adoption and use in classrooms. (Imtiaz and Maarop, 2014; Teo and van Schaik, 2012; Straub, 2009)

Teachers are the determinants of ICT acceptance and integration in teaching and learning process.

Zanna and Rempel (1988) have suggested that attitudes can be viewed as: "the categorisation of a stimulus object along an evaluative dimension based upon, or generated from, three classes of information:

- a) cognitive information,
- b) affective/emotional information, and
- c) information concerning past behaviours or behavioural intentions"

They consider that attitudes are constantly changed due to intrinsic or extrinsic variables, without being able to exist as permanence or predisposition.

Therefore, in our research study, ICT's successful structural integration in educational procedure is closely related to teachers' of ancient Greek -in lower secondary state school- degree of acceptance technological innovation (Davis 1993;1989).

The conceptual framework of the presented survey is predominantly based on Technology Acceptance Model (TAM), and secondly on [Theory of Reasoned Action](#) (TRA), [Theory of Planned Behaviour](#) (TPB) and [Diffusion Of Innovations](#) (DOI). [These theories are briefly described in Table 1.]

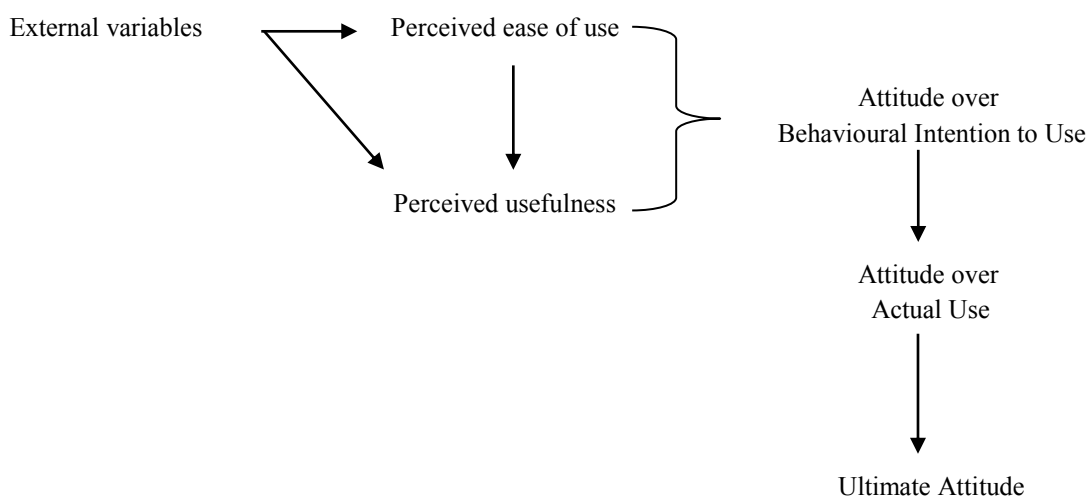
Table 1: Brief description of theories

| Authors | Model/Theory | Description of the model |
|---------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Davis (1989) | TAM - Technology Acceptance Model | This model aims to explain user's acceptance or rejection of new technologies, included mainly the "perceived usefulness" and "the perceived ease of use". |
| Ajzen and Fishbein (1975) | TRA - Theory of Reasoned Action | This theory aims to predict human behaviour and attitudes, included mainly "behavioural intention", "attitude" and "subjective norm". |
| Ajzen (1985 ; 1991) | TPB - Theory of Planned Behaviour | This theory aims to predict people's intention linking human's beliefs and behaviour, included in addition to "behavioural intention", "attitude" and "subjective norm" of TRA, "perceived behavioural control". |
| Rogers (1995) | DOI - Diffusion of Innovation | This theory aims to explain the "process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers 1995), giving five key characteristics 1) relative advantage, 2) compatibility, 3) complexity, 4) trialability, and 5) observability which affect innovation's adoption. |

These models and theories lead to a new proposed technology adoption model -as shown in Figure 1- consisted of:

- a) external variables,
- b) Perceived ease-of-use (PEOU),
- c) Perceived usefulness (PU),
- d) Behavioural Intention to Use (BIU),
- e) Actual Use (AU).

Figure 1: New technology adoption model

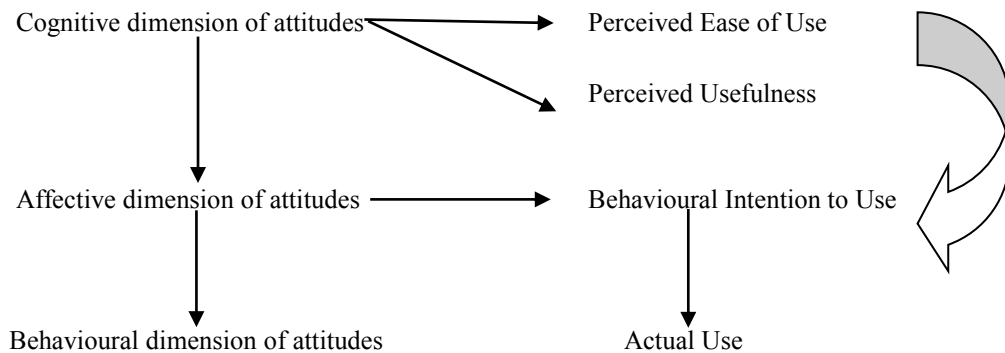


All forenamed, determine teachers' of ancient Greek language ultimate attitudes towards ICT's use in teaching procedure.

The proposed technology adoption model -as shown in Figure 2- is grounded in Four pillars: each pillar corresponds to one component of attitudes: Cognitive, Affective, Behavioural.

In the present paper will be examined only the first pillar, the Cognitive dimension of attitudes.

The cognitive component of attitudes consists of Perceived Ease of Use and Perceived Usefulness concerning ICT' s integration in teaching and learning practice as far as ancient Greek course is concerned.

Figure 2: Final model

5. Literature review

Previous international studies show that specific factors affect teachers' attitudes towards ICT' use on teaching and learning process.

In particular:

- lack of technical support (Buabeng-Andoh, 2012; Tong and Trinidad, 2005; Jones, 2004),
- insufficient and out of date -concerning the educational use of ICTs- technological equipment (Peralta and Costa, 2007; Pelgrum, 2001),
- teachers' adhesion to traditional teaching methods (Player-Koro, 2013; Lim and Chan, 2007; Lai et al., 2001; Honey and Moeller, 1990),
- teachers' lack of knowledge to use new educational technology (Ertmer et al., 2012; Eteokleous, 2008; Al-Oteawi, 2002),
- limited teachers' motivation to use and develop ICTs in teaching practice (Uluyol et al., 2014; Guoyuan et al., 2011; Karsenti et al., 2006; Van Braak et al., 2004; Galanouli et al., 2004; Hammond, 2002; Kankaanranta, 2001; Carter and Leeh, 2001; Snoeyink and Ertmer, 2001; Braak, 2000; Cox, Preston and Cox, 1999a; Cox, Preston and Cox, 1999b)

are significant factors determining teachers' attitudes towards ICTs.

In parallel, many researchers consider as important factor -which form teachers' attitudes- the ICT training. More specifically, teacher-training programmes in ICT issues have to be designed in regard to the development of those skills, which do intend to shape positive attitudes in ICT' use in teaching process, as for example the enhancement of self confidence (Scherer et al., 2015; Ertmer, 2005; Ma et al., 2005), the perceived ease of use (Li 2014; Teo, 2011) and the perceived usefulness (Jeyaraj et al., 2006), as well as teachers need not only technical but also pedagogical training in how to incorporate ICTs in educational process (Tondeur et al., 2016; Fives et al., 2015; Sang et al., 2010; Ertmer and Otterbreit-Leftwich, 2010; Peralta and Costa, 2007; King, 2002; Margerum-Leys and Marx, 2002; Van Braak, 2001; Reinen and Plomp, 1993).

In Greece, a large amount of researches have been conducted to study teachers' attitudes towards ICT' s use in teaching and learning procedure. Reviewing the literature, there are several studies concerning:

- a) pre-primary school teachers (Zaranis et al., 2017; Nikolopoulou and Gialamas, 2015; Nikolopoulou, 2014; Gialamas and Nikolopoulou, 2010; Tsitouridou and Vryzas, 2003),
- b) primary school teachers (Tziafetas et al. 2013; Giavrimis et al., 2011; Kokkinaki, 2010; Kiridis et al., 2006),
- c) lower and general secondary school teachers (Nikolopoulou and Gialamas, 2016; Paraskeva et al., 2008; Jimoyiannis and Komis, 2006; Demetriadis et al., 2003; Kynigos et al., 2001; Emvalotis and Jimoyiannis, 1999; Bikos, 1993), and
- d) teachers of all school levels (Kalogiannakis 2010; Pavlou and Vryonides 2009; Jimoyiannis and Komis, 2007; Vosniadoy and Kollias, 2001).

Nevertheless, as far as philologists are concerned, there are very few studies examining ICT's integration in teaching process, but there is no previous research study concentrated on teachers' of ancient Greek language attitudes in ICT's use.

Grouping the results of previous research studies, concerning Greek philologists' attitudes towards ICT's use in teaching and learning process, it is concluded that:

- a) philologists are positively disposed in ICT's use, nevertheless they do appear reluctant to move from traditional teaching style to innovative methods of teaching, adapting ICTs into the traditional teaching practice (Karabinis, 2010; Goufas, 2007; Politis et al., 2000),
- b) factors -as far ancient Greek language is concerned- which prevent innovative and technology-based approaches from being integrated in teaching and learning process, are first and foremost the centralized character of Greek educational system and secondly the inflexible traditional curriculum. Moreover, headmasters do have negative attitudes in adopting and emerging technologies in teaching and learning procedure (Tsoutsas et al., 2013; Giakoumatou, 2004; Demetriadis et al., 2003),
- c) philologists resist to change their teaching methods integrating ICTs in classroom practices, compared to teachers of science and teachers of economics (Diamantaki et al., 2001),
- d) philologists seem to be cautious about ICT's use, regarding the potential role of new technologies in affecting positively learning process in philological courses (Jimoyiannis and Komis, 2004),
- e) Greek philologists argue that, because of ICTs, their central role in learning environments will be loosed (Kaskandami, 2006), and
- f) female philologists do appear more negatives in ICT's use than male philologists (Jimoyiannis and Komis ,2004).

Greek philologists report that they hold negative attitudes towards ICTs because:

- a) they have low self-confidence so for technical skills as long as for pedagogic;
- b) and teaching use of ICTs in classroom (Zetta et al., 2009),

- c) they do not participate equitably in ICT's policymaking, stressing the lack of time, the shortage of technical support (Fragkouli and Hammond, 2007) and the lack of adequate training on ICTs (Kaskandami, 2006) as barriers to integrate digital tools in teaching,
- d) there are very few educational software in teaching philological courses (Georgiadou et al., 2003),
- e) there is an entrenched view concerning philologists' technological illiteracy (Matos and Chronaki, 2009; Giakoumatou, 2004).

All previously stated are considered as important parameters which have to be co-examined in order to answer the research questions of the present study, regarding teachers' of ancient Greek language attitudes towards ICT' use in teaching and learning process.

6. The study

6.1. Objectives and research questions (Research aim)

Indeed, educational changes do not represent views and perceptions of effective teachers. The most researches are oriented towards investigating teachers' beliefs and behaviours, without answering in their expressed concerns.

Our research study aims at examining philologists' attitudes towards ICT's use and exploitation in teaching ancient Greek language, taking into account the influence of the wider socio-economic-cultural.

Two research questions were designed to achieve the aim of the study:

First research question: *To what degree philologists who teach ancient Greek language in public lower secondary school are familiar with ICT' s use in teaching process?*

This question stresses the first part of cognitive dimension of teachers' attitudes concerning ICT's use, and more particularly ICT's degree of Perceived Ease of Use in teaching design of ancient Greek language course.

Second research question: *To what degree philologists who teach ancient Greek language in public lower secondary school do perceive ICT's use and exploitation, as an effective tool integrated in teaching process?*

This question stresses the second part of cognitive dimension of teachers' attitudes concerning ICT's use and exploitation, and more particularly ICT's degree of perceived usefulness in teaching approach of ancient Greek language course.

Each research question is correlated with a bunch of questions dispersed in the survey, in order not to guide participants' views.

6.2. Research methodology

The research method used for the present study is the statistical processing of the empirical data, distributing the variables into dependent and independent. The research study can be characterized as descriptive, quantitative sampling research, as well as

ensuring the highest degree of objectivity-reliability-validity (Creswell, 2011; Cohen et al., 2008; Gray, 2004).

The statistical analysis and the data processing is done using IBM SPSS Statistics 20.0 (Statistical Package for Social Sciences).

Descriptive statistics analysis is done using: mode, mean value and median, as well as statistical graphics displayed using histograms, bar charts and pie charts.

Inferential statistics analysis is done using the chi-square test of independence (χ^2) in order to discover whether two categorical variables differ from one another. No more than 25% of the categories should have expected frequencies less than five. In addition, the sample size should not be more than 250, because in that case χ^2 is not reliable. In the present study the expected frequencies is not more than 20% in order to strengthen the validity of χ^2 . The correlation coefficients for two nominal data calculating a two by two table is Phi and Cramer's V, as well as for two ordinal variables is Gamma. To sum up, as we use in science educational research the p-value is considered significant when $p = 0.050$ or $p < 0.05$. If the p-value is (equal to) or less than the chosen significance level (α), then null hypothesis is rejected there is dependency between two variables (Nova, 2006; Karagiorgos, 2001).

6.3. The sample

The research population of the present study is the total population of Greek teachers of ancient Greek language in public lower secondary schools. Using stratified sampling method we resulted in a sample of 241 philologists from 96 public lower secondary schools derived from 13 Regional Educational Directories, during school year 2013-2014, which is a representative sample (Houser, 2009; Cohen et al., 2008; Groenewald, 2004).

Table 2 displays demographic and individual characteristics of the sample, which are used as independent variables. Specifically, are showed: gender, years of teaching experience, knowledge of teaching ancient Greek language with ICTs, and the type of ICT training. According to the Table 1, the percentage of male and female teachers is representative in the Greek educational system. It should be also noticed that as far as the years of teaching experience concerned, the percentages among the three different groups are almost equal. Regarding teachers' perceptions about knowledge to teach ancient Greek language with ICTs, the majority of philologists (60,5%) do not know how to teach ancient Greek language with new technologies. Moreover, 44,8% of the teachers in the sample have attended A-level teacher training (which includes training in basic technical skills, while only 15,8% have been certified in B-level teacher training (which includes training in integrating ICT in the classroom practices).

Table 2: Demographic and Individual characteristics of the sample (241 philologists)

| Philologists' characteristics | |
|--------------------------------------|------------------------------------------------------------|
| Gender | Knowledge to teach ancient Greek language with ICTs |
| Males: 22%, N= 53 | Much: 10,5%, N=25 |
| Females: 78%, N=188 | Little: 29%, N=69 |
| | None: 60,5%, N=144 |
| | Non response: 1,2%, N=3 |
| Years of teaching experience | Type of ICT training |
| 1-10: 36,4%, N=87 | A-level teacher training in ICT: 44,8%, N=108 |
| 11-20: 32,6%, N=78 | B-level teacher training in ICT: 15,8%, N=38 |
| 21+: 31%, N=74 | None teacher training in ICT: 39,4%, N=95 |
| Non response: 0,8%, N=2 | |

As a data collection research tool was chosen the self-complete questionnaire, considered as the most efficient means of accessing in a large number of participants (Robson, 2011; Robson, 2002).

6.4. The instrument

As scale attitude measurement was selected Likert scale, as the most widely used rating scale. Likert-type scale uses fixed choice responses, designed in linear model to measure attitudes, on a continuum level anchored by 'agreement' to 'disagreement'. Moreover, Likert scale is one of the most acceptable used psychometric scale in educational and social researches (Nova, 2006; Michalopoulou, 1992; Likert, 1932).

However, our questionnaire was primarily based on a a four-point Likert scale, without enabling neutral or opt-out responses. The reason for the four-point scale is that neutral -as neither agree nor disagree- responses cause confusion (Tsakiri, 1991). Questionnaire' s assessment validity used in the present study was the face validity and the content validity.

As for the questionnaire's reliability was used the measure of internal consistency, and specifically the widely used measure of internal consistency Cronbach's alpha.

A commonly accepted rule of thumb to describe internal consistency using Cronbach's alpha is as follows -Table 3- (Cronbach and Shavelson, 2004; George and Mallery, 2003).

Table 3: Cronbach's alpha reliability

| Cronbach's alpha | Internal Consistency |
|----------------------------|-----------------------------|
| $\alpha \geq 0.9$ | Excellent |
| $0.8 \leq \alpha \leq 0.9$ | Good |
| $0.7 \leq \alpha \leq 0.8$ | Acceptable |
| $0.6 \leq \alpha \leq 0.7$ | Questionable |
| $0.5 \leq \alpha \leq 0.6$ | Poor |
| $\alpha \leq 0.5$ | Unacceptable |

As far as the present study is concerned, observing Table 4 and Table 5 is concluded that Cronbach's alpha -concerning teachers' of ancient Greek language degree of familiarity with ICTs (0,866) and degree of effectiveness in ICT's integration in teaching and learning practice (0,849)- can be deemed high reliable.

Table 4: Degree of familiarity with ICTs

| Reliability Statistics | | |
|------------------------|----------------------------------------------|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| ,866 | ,869 | 9 |

Table 5: Degree of effectiveness with ICTs

| Reliability Statistics | | |
|------------------------|----------------------------------------------|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| ,849 | ,844 | 23 |

7. Results

7.1. Perceived Ease of Use/Degree of familiarity with ICTs

The first research axis -regarding teachers' attitudes- concerns the ICT's degree of personal and educational use, the self-perception degree towards ICT's use and the degree of ability in ICT's teaching integration. Table 6 displays teachers' degree of familiarity with ICTs in teaching process. This axis consists of 9 items in the questionnaire, representing teachers' perceived ease of use towards ICT's use in teaching practice. Specifically, as for ICT's degree of personal and educational use (Q1, Q2, Q3, Q4) the large majority of participants -adding strongly agree and agree-, use easily ICT for information (about 88%) and communication (71%) whereas there is a decrease in positive responses concerning lesson preparation (about 61%), resulting in a dominant negative percentage (about 77%) of teachers who use easily ICT in teaching practice (only 23%).

Additionally, as for self-perception degree towards ICT's use (Q5, Q6, Q7) philologists feel familiar with ICT (strongly agree and agree 57,3%), but only 11,2% of participants feel strongly adequately trained in ICT's use in teaching ancient Greek language. As for strong teacher in control in ICT's use, participants' answers are almost equal (55,6% strongly agree and agree whilst 44,4% disagree and strongly disagree).

Finally, as for the degree of ability in ICT's teaching integration (Q8, Q9) a great majority of participants (70,5% strongly agree and agree) feel that ICT can maximize teachers' interest and creativity in teaching process, and the 62,5% -more or less- feel that ICT do improve teachers' productivity in teaching activities.

Table 6: Perceived Ease of Use. Teachers' response rates (%) on the 9 items (n = 241) teachers)

| Degree of familiarity with ICTs | SA | A | D | SD |
|------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
| Q1: I use, easily, ICT for information. | 57,3% | 30,3% | 10,8% | 1,7% |
| Q2: I use, easily, ICT for communication. | 29,9% | 41,1% | 13,7% | 15,4% |
| Q3: I use, easily, ICT to prepare my lesson. | 17,9% | 42,9% | 24,6% | 14,5% |
| Q4: I use, easily, ICT in teaching practice. | 4,6% | 18,3% | 49,6% | 27,5% |
| Q5: Are you familiar with ICT? | 31,5% | 25,7% | 27,8% | 14,9% |
| Q6: Do you feel adequately trained in ICT's use in teaching ancient Greek? | 11,2% | 33,6% | 24,9% | 30,3% |
| Q7: Do you feel strong teacher in control when you use ICT? | 29,5% | 26,1% | 25,7% | 18,7% |
| Q8: Do you feel that ICT do increase your interest and creativity in teaching process? | 54,8% | 15,8% | 11,6% | 17,8% |
| Q9: Do you feel that ICT do improve your productivity in teaching practice (e.g. more teaching scenarios)? | 31,1% | 31,5% | 11,6% | 25,7% |

Key: SA = strongly agree; A = agree; D = disagree; SD = strongly disagree.

7.2. The impact of independent variables

Regarding the impact of the independent variables were found statistically significant differences in the degree of familiarity of teachers of ancient Greek language towards ICT.

A. As for the gender:

This study found that Greek male teachers of ancient Greek language hold more positive attitudes towards ICT's use in teaching preparation and in teaching practice than female teachers. Furthermore, male philologists who teach ancient Greek language see themselves more positively than female see them.

More precisely, more male teachers:

- use ICT in teaching preparation ($\chi^2=10,254$, $df(3)$, $p=,017$, $\Phi=,017$) and in teaching practice ($\chi^2=16,908$, $df(3)$, $p=,001$, $\Phi=,001$), and
- have high self-perception degree towards ICT's use ($\chi^2=21,783$, $df(3)$, $p<,001$, $\Phi=,000$).

However, as for the degree of ability in ICT's teaching integration, Greek female teachers of ancient Greek language respond more positively than male colleagues. More especially, more female philologists who teach ancient Greek language strongly believe that ICT can improve:

- teachers' creativity in teaching process ($\chi^2=24,999$, $df(3)$, $p<,001$, $\Phi=,000$), and
- teachers' productivity in teaching activities ($\chi^2=24,704$, $df(3)$, $p<,001$, $\Phi=,000$).

B. As for the years of teaching experience:

The results of this study showed that philologists who have 1-10 years of teaching experience are more positive about the role of ICT in teaching preparation and in teaching practice than those with 11-20 years of experience -in the middle of their career- and those with 21-35 years of teaching experience -at the end of their career-. Moreover, "young" philologists (1-10 years of teaching experience) who teach ancient

Greek language see themselves more positively in teaching process than "older" (as for the years of teaching experience) philologists, espousing a high teacher control when they use ICT.

More precisely, teachers with low (1-10 years) teaching experience are more willing to:

- a) use ICT tools in teaching preparation ($\chi^2=95,326$, $df(6)$, $p<,001$, $\Gamma=,000$) and in teaching practice ($\chi^2=74,472$, $df(6)$, $p<,001$, $\Gamma=,000$)
- b) adopt high self-perception degree towards ICT's use, as for adequately trained teachers in ICT's use in teaching ancient Greek language ($\chi^2=35,546$, $df(6)$, $p<,001$, $\Gamma=,000$), and
- c) adopt high self-perception degree, as for strong teacher control using ICT in their teaching practices ($\chi^2=67,939$, $df(6)$, $p<,001$, $\Gamma=,000$).

However, as for the degree of ability in ICT's teaching integration, teachers with low (1-10) teaching experience hold more positive attitudes than those who have 11-20 or 21-35 years of teaching experience. More especially, the fewer years of teaching experience they have, the more positive are their views about ICT's teaching integration. "Young" philologists strongly believe that ICT can improve:

- a) teachers' creativity in teaching process ($\chi^2=99,330$, $df(6)$, $p<,001$, $\Gamma=,000$), and
- b) teachers' productivity in teaching activities ($\chi^2=97,319$, $df(6)$, $p<,001$, $\Gamma=,000$).

C: As for the knowledge to teach ancient Greek language with ICTs:

The results of this study showed a strong positive relationship between philologists who teach ancient Greek language -having much knowledge about ICT's use- and ICT's use in teaching preparation and in teaching practice. More especially, the higher degree of knowledge philologists have, the more positive are about ICT's use in teaching preparation and in teaching practice. Furthermore, teachers who have much knowledge to teach ancient Greek language with ICTs see themselves more positively than those who do not have, embracing a high teacher control when they use ICT.

More precisely, teachers of ancient Greek language having adequate knowledge to use ICTs in teaching ancient Greek language are more willing to:

- a) use ICT tools in teaching preparation ($\chi^2=23,961$, $df(6)$, $p=,001$, $\Gamma=,000$) and in teaching practice ($\chi^2=34,017$, $df(6)$, $p<,001$, $\Gamma=,000$)
- b) adopt high self-perception degree towards ICT's use, as for adequately trained teachers in ICT's use in teaching ancient Greek language ($\chi^2=43,273$, $df(6)$, $p<,001$, $\Gamma=,000$), and
- c) adopt high self-perception degree, as for strong teacher control using ICT in their teaching practices ($\chi^2=12,243$, $df(6)$, $p=,057$, $\Gamma=,002$).

However, as for the degree of ability in ICT's teaching integration, teachers with much knowledge about ICT's use in teaching ancient Greek language hold strong positive attitudes towards ICT' integration in teaching process. Similarly, the

participants respond that the knowledge of how to teach ancient Greek language with ICTs have a strong impact on teachers' productivity in teaching activities ($\chi^2=21,024$, $df(6)$, $p=,002$, $\Gamma=,001$).

D. As for the type of ICT training:

This study showed that there is a strong relationship between teachers' ICT training and ICT's use in teaching preparation. Specifically, philologists who have attended A-level or B-level teacher training in ICT have more positive attitudes towards ICT's educational use than those who have none teacher training in new technologies, using ICT tools in teaching preparation ($\chi^2=35,709$, $df(6)$, $p<,001$, $\Phi=,000$).

However, only the attendance of B-level training in ICT can make teachers show positive attitudes as for high self-perception degree towards ICT's use. Especially, philologists having been trained in ICT's see themselves more positively than those who do not have, espousing a high teacher control when they use ICT.

More precisely, teachers of ancient Greek language having attended B-level training in ICT's use in teaching process are more willing to:

- a) adopt high self-perception degree towards ICT's use, as for adequately trained teachers in ICT's use in teaching ancient Greek language ($\chi^2=27,666$, $df(6)$, $p<,001$, $\Phi=,000$), and
- b) adopt high self-perception degree, as for strong teacher control using ICT in their teaching practices ($\chi^2=60,897$, $df(6)$, $p<,001$, $\Phi=,000$)

However, as for the degree of ability in ICT's teaching integration, teachers with B-level training tend to have strong positive attitudes towards ICT's integration in teaching process. Teachers certified in B-level training strongly believe that ICT can improve:

- a) teachers' creativity in teaching process ($\chi^2=62,494$, $df(6)$, $p<,001$, $\Phi=,000$), and
- b) teachers' productivity in teaching activities ($\chi^2=59,910$, $df(6)$, $p<,001$, $\Phi=,000$)

7.3. Perceived Usefulness/Ease of Use/Degree of familiarity with ICTs

The second research axis -regarding teachers' attitudes- concerns the ICT's usefulness degree: in achieving learning objectives, in teaching application of ICT, and the degree of effectiveness in ICT's teaching integration as for teachers' role.

Table 7 displays teachers' degree of effectiveness in ICT's integration in teaching and learning practice. This axis consists of 17 items in the questionnaire, representing teachers' perceived usefulness towards ICT's implementation context in teaching practice activities. More specifically, as for ICT's usefulness degree in achieving learning objectives (Q1, Q2, Q3, Q4, Q5, Q6) the vast majority of participants -adding strongly agree and agree-, believe that ICT's use can contribute to achieve cognitive (87,1%) and affective (68%) goals, whereas the positive percentages fall off regarding the psychomotor (47,7%) goals. Furthermore, Greek teachers feel that ICT can be used to facilitate teaching and learning objectives -53,9% of participants strongly agree or agree- but ICT's presence in teaching and learning process neither disrupts the

traditional well known didactic triangle (disagree and strongly disagree 79,3%) nor disorientate school children from general learning objectives (74,7%, adding disagree and strongly disagree).

In addition, as for the usefulness degree in teaching application of ICT (Q7, Q8, Q9, Q10, Q11, Q12) the majority of philologists (78,4% strongly agree and agree) report that each classroom must be equipped with the appropriate technological infrastructure (interactive whiteboards, internet, educational software) in order to integrate effectively ICTs in teaching practice, whereas the number of participants who believe that computers should be located in science laboratory -where teachers must have open access- are almost equal (50,2%) with those who are opposed to this view (49,8%). Greek teachers of ancient Greek language consider that their constant training is influential factor in ICT's use in teaching approach of ancient Greek course (85,5% strongly agree), as well as a great majority believe -more or less- that ICT' s use must be determined only by teachers' willingness (77,6%). On the other hand, most participants (60,2%) believe -more or less- that ICT's use in teaching ancient Greek language requires teachers' adequate technological pedagogical knowledge, nevertheless the majority of them do not agree -more or less- (53,1%) that ICT's use in teaching ancient Greek language can facilitate teachers to enhance teaching process.

Finally, as for ICT's effectiveness degree concerning teachers' role (Q13, Q14, Q15, Q16, Q17), most of philologists state that ICT's use in teaching ancient Greek language can reduce teaching time concerning traditional teaching strategies, enhancing teachers' role (62,3% strongly agree and agree), but the positive responses, gradually fall off concerning ICT's use as a effective factor to enhance language arts literacy in teaching practice, facilitating teacher's role (53,1% strongly agree and agree), resulting in a dominant negative percentage (68,4% strongly disagree or disagree) of teachers who emphasize that ICT can't help school children to develop skills and competencies about: search-observation-comparison-classification-solving, simplifying teacher's role. The results also reveal that Greek teachers of ancient Greek language tend to believe - more or less- that ICT can enhance the relationship between school children and ancient Greek, upgrading teacher's role (64,3%). However, the 60,2% (more or less) of participants stress that ICT's use in teaching ancient Greek language do not promote cooperation among philologists

Table 7: Perceived Usefulness. Teachers' response rates (%) on the 17 items (n = 241 teachers)

| Degree of effectiveness in ICT's integration in teaching and learning practice | SA | A | D | SD |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
| Q1: ICT contribute to achieve cognitive goals. | 59,3% | 27,8% | 5,8% | 7,1% |
| Q2: ICT contribute to achieve affective goals. | 53,1% | 14,9% | 17,4% | 14,6% |
| Q3: ICT contribute to achieve psychomotor goals. | 45,2% | 2,5% | 24,9% | 27,4% |
| Q4: ICT can facilitate teaching and learning objectives of ancient Greek language course. | 30,7% | 23,2% | 33,6% | 12,4% |
| Q5: ICT disrupt the relationship between Teacher-Student-Content. | 18,7% | 2,1% | 37,8% | 41,5% |
| Q6: ICT disorientate school children from general learning objectives. | 9,1% | 16,2% | 25,3% | 49,4% |
| Q7: Each classroom must be equipped with the appropriate technological infrastructure (interactive whiteboards, internet, educational software) in order to integrate ICT in teaching practice. | 66,8% | 11,6% | 15,8% | 5,8% |
| Q8: Computers should be located in science laboratory, where teachers must have open access. | 41,5% | 8,7% | 38,2% | 11,6% |
| Q9: Philologists' constant training is influential factor in ICT's use in teaching ancient Greek. | 85,5% | --- | 3,3% | 11,2% |
| Q10: ICT's use must be determined only by teachers' willingness. | 66% | 11,6% | 10,8% | 11,6% |
| Q11: ICT's use in teaching ancient Greek language requires teachers' adequate technological pedagogical knowledge. | 39% | 21,2% | 17% | 22,8% |
| Q12: ICT's use in teaching ancient Greek language can facilitate teachers to enhance teaching process. | 17% | 30,3% | 34,4% | 18,3% |
| Q13: ICT's use in teaching ancient Greek language can reduce teaching time concerning traditional teaching strategies, enhancing teachers' role. | 38,2% | 24,1% | 11,6% | 26,1% |
| Q14: ICT's use in teaching ancient Greek language contribute to enhance language arts literacy, facilitating teacher's role. | 24,1% | 29% | 9,5% | 37,3% |
| Q15: ICT can help school children to develop skills and competencies about: search-observation-comparison-classification-solving,simplifying teacher's role. | 27% | 4,6% | 39,4% | 29% |
| Q16: ICT can enhance the relationship between school children and ancient Greek, upgrading teacher's role. | 51% | 13,3% | 23,2% | 12,4% |
| Q17: Do you consider that ICT's use in teaching ancient Greek language promote cooperation among philologists? | 39,8% | --- | 32% | 28,2% |

Key: SA = strongly agree; A = agree; D = disagree; SD = strongly disagree.

7.4. The impact of independent variables

Regarding the impact of the independent variables were found statistically significant differences in the degree of effectiveness in ICT's integration in teaching and learning practice.

A. As for the gender:

This study showed that both male and female teachers of ancient Greek language hold equally positive attitudes towards ICT's usefulness degree in achieving affective goals ($\chi^2=26,223$, $df(3)$, $p<,001$, $\Phi=,000$), but male philologists are more positive than female

colleagues about whether or not ICT can facilitate teaching and learning objectives of ancient Greek language course ($\chi^2=9,188$, $df(3)$, $p=,027$, $\Phi=,027$).

However, as for the degree of ICT's effectiveness concerning teachers' role Greek female teachers of ancient Greek language respond more positively than male colleagues. More precisely, more female teachers strongly believe that:

- a) ICT's use in teaching ancient Greek language contribute to enhance language arts literacy, facilitating teacher's role ($\chi^2=28,814$, $df(3)$, $p<,001$, $\Phi=,000$),
- b) ICT can help school children to develop skills and competencies about: search-observation-comparison-classification-solving, simplifying teacher's role ($\chi^2=8,738$, $df(3)$, $p=,033$, $\Phi=,033$), and
- c) ICT can enhance the relationship between school children and ancient Greek language, upgrading teacher's role ($\chi^2=20,575$, $df(3)$, $p<,001$, $\Phi=,000$).

B. As for the years of teaching experience:

The results of this study showed that philologists who have 1-10 years of teaching experience are more positive about ICT's usefulness degree in achieving learning objectives than those with 11-20 years of experience -in the middle of their career- and those with 21-35 years of teaching experience.

More precisely, teachers with low (1-10 years) teaching experience:

- a) are more willing to use ICTs in achieving cognitive ($\chi^2=23,828$, $df(6)$, $p=,001$, $\Gamma=,020$) and affective goals ($\chi^2=69,818$, $df(6)$, $p<,001$, $\Gamma=,000$), and
- b) consider that ICT can facilitate teaching and learning objectives of ancient Greek language course ($\chi^2=70,638$, $df(6)$, $p<,001$, $\Gamma=,000$)

However, as for the degree of ICT's effectiveness concerning teachers' role, teachers with low (1-10) teaching experience hold more positive attitudes than those who have 11-20 or 21-35 years of teaching experience. More especially, the fewer years of teaching experience they have, the more positive are their views. "Young" philologists strongly believe that ICT:

1. ICT's use in teaching ancient Greek language can reduce teaching time concerning traditional teaching strategies, enhancing teachers' role ($\chi^2=36,103$, $df(6)$, $p<,001$, $\Gamma=,000$),
2. ICT's use in teaching ancient Greek language can contribute to enhance language arts literacy, facilitating teacher's role ($\chi^2=46,604$, $df(6)$, $p<,001$, $\Gamma=,000$), and
3. ICT can enhance the relationship between school children and ancient Greek, upgrading teacher's role ($\chi^2=79,364$, $df(6)$, $p<,001$, $\Gamma=,000$).

D. As for the knowledge to teach ancient Greek language with ICTs:

This study showed that there is not positive relationship between philologists who teach ancient Greek language -having much knowledge about ICT's use- and ICT's usefulness degree in achieving learning objectives. More especially, the higher degree of knowledge philologists have, the more negative are about ICT's usefulness degree in

achieving learning objectives. Teachers of ancient Greek language having adequate knowledge to use ICTs in teaching ancient Greek are unwilling to integrate ICT in classroom practices, considering new ICT tools cannot facilitate teaching and learning objectives of ancient Greek language course ($\chi^2=23,164$, $df(6)$, $p=,001$, $\Gamma=,051$)

However, as for the degree of ICT's effectiveness concerning teachers' role, philologists with much knowledge about ICT's use in teaching ancient Greek language hold strong positive attitudes. The participants respond that the knowledge of how to teach ancient Greek with ICTs have a strong impact on teaching process, and more especially on enhancing language arts literacy, facilitating teachers' role ($\chi^2=21,963$, $df(6)$, $p=,001$, $\Gamma=,001$).

Furthermore, philologists with none knowledge about ICT's use in teaching ancient Greek language do not believe that ICT can enhance the relationship between school children and ancient Greek, upgrading teacher's role ($\chi^2=21,020$, $df(6)$, $p=,002$, $\Gamma=,129$).

E. As for the type of ICT training:

This study showed that there is a strong relationship between teachers' ICT training and ICT's usefulness degree in achieving learning objectives. Specifically, philologists who have attended A-level or B-level teacher training in ICT have -more or less- positive attitudes towards ICT's integration in teaching process, using ICT tools in achieving affective goals ($\chi^2=46,8000$, $df(6)$, $p<,001$, $\Phi=,000$). Moreover, trained in ICTs philologists consider that ICT tools can facilitate teaching and learning objectives of ancient Greek language course ($\chi^2=41,778$, $df(6)$, $p<,001$, $\Phi=,000$).

However, as for the degree of ICT's effectiveness concerning teachers' role, teachers with B-level training tend to have more strong positive attitudes towards ICT' integration in teaching process than those who have only A-level training. Teachers certified in B-level training strongly believe that ICT's use in teaching ancient Greek language:

- a) can reduce teaching time concerning traditional teaching strategies, enhancing teachers' role ($\chi^2=41,839$, $df(6)$, $p<,001$, $\Phi=,000$),
- b) can contribute to enhance language arts literacy, facilitating teacher's role ($\chi^2=26,818$, $df(6)$, $p<,001$, $\Phi=,000$), and
- a) can enhance the relationship between school children and ancient Greek, upgrading teacher's role ($\chi^2=43,810$, $df(6)$, $p<,001$, $\Phi=,000$).

8. Discussion and conclusions

Undoubtedly, there is some emerging evidence about the impact of teachers' attitudes towards ICT's integration in teaching and learning approach of the Ancient Greek language course. Although many studies have been conducted to examine the relationship between teachers' attitudes and ICT's integration in classroom practices, there is no evidence regarding the lower secondary school teachers' of ancient Greek

language attitudes about ICT's use in teaching and learning process. The exploratory study was driven by the facts that:

- a) ICT's use in the teaching and learning procedure has become -more or less- an imperative need (Tikam 2013),
- b) teachers' role in promoting ICT's use is crucial (Fullan 2007),
- c) there is a constant teachers' resistance towards ICT's integration into teaching and learning procedure (Howard and Mozejko 2015), and
- d) teachers of ancient Greek language show a cautious predisposition towards ICT's integration in the teaching approach (Jimoyiannis and Komis 2004).

Presently, in Greek educational system, there is a strong resistance to any innovation, which is not embracing ICT's role in teaching and learning practice. This study reveals Greek public lower secondary school teachers' of ancient Greek language attitudes towards ICT's use in educational procedure, contributing to the previous empirical evidence the teachers' perspectives on ICTs. The sample size/the total number of participants (241 philologists from 96 public lower secondary schools derived from 13 Regional Educational Directories) can be considered as representative, allowing broad generalisations. The empirical findings of this research can benefit teachers, further researchers, educational policy-makers, as well as this study unfolds, exclusively, around the lower secondary school teachers.

Regarding the first goal of the present study (to examine Perceived Ease of Use concerning teachers' of ancient Greek language degree of familiarity with ICTs), the findings indicate that philologists who teach ancient Greek language exhibit increased willingness to adopt ICTs for personal use (88% for information, 71% for communication) as well as for lesson planning, but they are reluctant to incorporate ICTs as structural tool in teaching and learning process. As seen in Table 6, the great majority of the teachers in the sample refuse to use ICT in teaching practice (about 77% strongly disagree or disagree). Moreover, most of the teachers of ancient Greek language feel familiar with the use of ICTs, and feel strong teacher in control in ICT's use (around 57,3% and 55,6% respectively), whereas they feel inadequately trained in ICT's integration towards teaching ancient Greek language (about 55,2%). To sum up, the 70,5% of participants -more or less- feel that ICT tools do amplify teachers' productivity in teaching practices (62,5%, more or less).

The effect of the Perceived Ease of Use concerning teachers' of ancient Greek language degree of familiarity with ICTs align with earlier studies (Jimoyiannis and Komis 2004; Demetriadis et al. 2003) which showed that philologists are skeptical about ICT's use in teaching practice, regarding the potential role of digital tools.

As far as the effect of demographic and individual characteristics of the sample on teachers' attitudes towards ICT's integration in teaching ancient Greek language, it was found that gender, years of teaching experience, knowledge to teach ancient Greek language with ICTs, and type of ICT training are statistically related to the attitudes of Greek philologists who teach ancient Greek language, and mainly to the first research

question (to what degree philologists who teach ancient Greek language in public lower secondary school are familiar with ICT's use in teaching process). More specifically:

- a) the Greek male teachers of ancient Greek language, the "young" philologists (1-10 years of teaching) who teach ancient Greek language, the philologists who teach ancient Greek language having much knowledge about ICT's use, hold, in general, positive attitudes about ICT's integration in teaching preparation and in teaching practice. Yet, the teachers who have attended some training in ICTs have positive attitudes towards the significant role of ICTs in teaching preparation, but teachers' training in ICTs do not have statistically significant impact in teaching practice,
- b) the Greek male teachers of ancient Greek language, the teachers with low (1-10 years) teaching experience, the philologists who teach ancient Greek language having much knowledge about ICT's use, and the teachers who have attended B-level training in ICTs, feel adequately trained in ICT's use in teaching ancient Greek language, having high self-perception degree towards ICT' use,
- c) the female teachers of ancient Greek language, the "young" philologists (1-10 years of teaching) who teach ancient Greek language, the philologists who teach ancient Greek language having much knowledge about ICT's use, and the teachers of ancient Greek language certified in B-level training, report that ICT can improve teachers' creativity in teaching process and teachers' productivity in teaching activities, identifying a high degree of ability in ICT's teaching integration,
- d) the teachers with low (1-10 years) teaching experience, the philologists who teach ancient Greek language having much knowledge about ICT's use, and and the teachers who have attended B-level training in ICTs feel strong teacher control using ICT in their teaching practices, having high self-perception degree towards ICT' use.

Regarding the second goal of the present study (to examine Perceived Usefulness concerning teachers' of ancient Greek language degree of effectiveness in ICT's integration in teaching and learning practice), the findings illuminate that teachers of ancient Greek language perceive ICT's use as an effective factor in achieving cognitive (87,1%) and affective (68%) goals, but they do not consider that new technologies have a crucial impact on achieving psychomotor goals (about 47,7%). As seen in Table 7, one of the most significant findings emerged from this study is that the majority of the teachers in the sample consider that ICT do not bring about radical changes in teaching approach of ancient Greek language, adopting ICT as a facilitator in teaching process. The results of the findings show that ICT's use in classroom practices do not dissolve the traditional relationship between Teacher-Student-Content (about 79,3% strongly disagree or disagree), whereas they agree -more or less- that ICT tools do not disorientate school children from general learning objectives (74,7%).

Moreover, the 78,4% of participants -more or less- consider that each classroom must be technologically equipped with the appropriate digital infrastructure in order to

support digital teaching practices. Greek teachers of ancient Greek language also perceive as crucial factors influencing successful ICT integration in teaching process:

- a) the constant training (85,5% strongly agree),
- b) teachers' willingness in ICT's use (77,6% strongly agree or agree), and
- c) teachers' pedagogical knowledge (60,2% strongly agree or agree).

However, they do not consider that ICT tools can make easier the teaching process, stressing the supportable role of ICTs in teaching practice. The large majority of participants believe -more or less- that ICTs cannot be an effective factor in teaching enhancement regarding the high order thinking skills, as search-observation-comparison-classification-solving (68,4% more or less), nor can be a crucial factor to enhance language arts literacy (53,1% strongly agree and agree). To sum up, ICT's use in teaching ancient Greek language can sustain traditional teaching strategies (62,3% strongly agree and agree), can arouse the interest of school children for the ancient Greek language (64,3% strongly agree and agree), but cannot open avenues for cooperation among philologists (60,2% more or less).

The effect of the Perceived Usefulness concerning teachers' of ancient Greek language degree of effectiveness in ICT's integration in teaching and learning practice align with earlier studies (Jimoyiannis and Komis, 2007) which showed that philologists' use of ICTs is restricted to support traditional practices rather than integrating ICTs as structural learning tool.

As far as the effect of demographic and individual characteristics of the sample on teachers' attitudes towards ICT's integration in teaching ancient Greek language, it was found that gender, years of teaching experience, knowledge to teach ancient Greek language with ICTs and type of ICT training are statistically related to the Greek teachers of ancient Greek language attitudes, and mainly to the second research question (to what degree philologists who teach ancient Greek language in public lower secondary school consider ICT's use as an effective factor in teaching process). More specifically:

- a) the "young" philologists (1-10 years of teaching) who teach ancient Greek language, hold, in general, positive attitudes about ICT's use in achieving cognitive and affective goals,
- b) both Greek male and female teachers of ancient Greek language, and the philologists who have attended A-level or B-level teacher training in ICTs, hold positive attitudes about ICT's use in achieving and affective goals,
- c) the Greek male teachers of ancient Greek language, the philologists who have 1-10 years of teaching experience, and philologists who have attended A-level or B-level teacher training in ICTs, report that ICT can facilitate teaching and learning objectives of ancient Greek language course, whereas the philologists who teach ancient Greek language having much knowledge about ICT's use hold negative attitudes about ICT's use in achieving learning objectives,
- d) the Greek female teachers of ancient Greek language, the "young" philologists (1-10 years of teaching experience) who teach ancient Greek language, the

philologists who teach ancient Greek language having much knowledge about ICT's use, and the teachers who have attended B-level training in ICTs, strongly believe that ICT's use in teaching ancient Greek language enhance language arts literacy, facilitating teacher's role, whereas the "young" (regarding the years of teaching experience) philologists suggest that ICT can reduce teaching time - concerning traditional teaching strategies- enhancing teachers' role,

- e) the Greek female teachers of ancient Greek language consider that ICT's use can support special skills and competencies as search-observation-comparison-classification-solving, simplifying teacher's role,
- f) the Greek female teachers of ancient Greek language, the philologists with low (1-10) teaching experience, the philologists who teach ancient Greek language having much knowledge about ICT's use, and the teachers who have attended B-level teacher training in ICTs, strongly believe that ICT can capture school children's interest in ancient Greek language, upgrading teacher's role.

To sum up, the research findings are quite similar to those of Honey and Moeller (1990), Lai et al. (2001), Lim and Chan (2007), Player-Koro (2013), regarding teachers' inflexibility in ICT's integration in teaching and learning practice. Teachers prefer to use ICT without changing their traditional teaching approaches, incorporating ICTs as a sustainable teaching tool in a strong teacher in control classroom activity (Politis et al. 2000). However, in our study is revealed that philologists -particularly those who teach ancient Greek language- are positive to integrate ICTs in their lesson preparation and instructional design, but they are still reluctant to integrate digital educational tools in teaching process. They strongly believe that ICTs can motivate teachers -as innovative tools of teaching and learning practice- in teaching methods, but cannot be used as benchmark for teaching and learning procedure. This may occur in the near future.

Additionally, the findings show that the major influential factor affecting teachers' attitudes towards ICT's total integration in teaching and learning procedure, is the fact that philologists feel inadequately trained in ICT's use in teaching ancient Greek language. The results of this study are quite similar with the studies of Mishra and Koehler (2006), Gu et al. (2013) as for primary school teachers, regarding teachers' knowledge on how to use and integrate ICTs in teaching process. In the present study, teachers having low self-perception about ICT's use, result in using ICT mainly for achieving cognitive goals, in other words for lower order thinking skills. Greek philologists who teach ancient Greek language deny to escape from the traditional teaching methods, preferring ICT's use in achieving cognitive rather than affective or psychomotor goals. An obvious explanation may be that teachers feel more comfortable in developing low order thinking skills, because this is close to the traditional teaching practices. This is aligned with another study -mentioned by Brun (2014) in Chile- in which is presented that teachers use ICT as sustainable tool in traditional teaching and learning practice.

In conclusion, gender, years of experience in teaching, specific knowledge in teaching ancient Greek language with ICT and appropriate in-service training on ICTs

have a strong effect on teachers' of ancient Greek language attitudes, regarding ICT's use as a structural factor of teaching and learning procedure.

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THE IMPACT OF COGNITIVE DIMENSION OF TAM-PERCEIVED USEFULNESS AND PERCEIVED EASE OF USE IN TEACHERS' ATTITUDES TOWARDS ICT' S INTEGRATION IN TEACHING ANCIENT GREEK LANGUAGE IN LOWER SECONDARY SCHOOL: THE CASE OF GREECE

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