



# Effect of strategy instruction on EFL students' video-mediated integrated writing performance

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## ABSTRACT

Integrated writing and strategy instruction (SI) in the English for Academic Purposes (EAP) context have increasingly drawn much research interest in recent years for their strong pedagogical and assessment value. The role of video in integrated writing has also been widely acknowledged for pedagogical and theoretical reasons. However, research on the use of video in integrated writing tasks especially in the EAP context still remains scarce. To address this gap, this paper examines the effect of SI on students' integrated writing as indicated in their overall writing performance scores and in each of the scoring rubric scales and the differences in their performance per Common European Framework of Reference (CEFR) level. We conduct explicit SI intervention for one semester in an EAP course. The success of the intervention is highlighted in the experimental group students' substantial improvement in their overall writing scores and particularly in the citation and verbatim scales especially at intermediate and advanced level. Our findings suggest the positive impact explicit SI has on integrated writing performance. They also highlight the value and feasibility of using video in instruction and assessment of integrated writing in EAP contexts.

## 1. Introduction

The ability to synthesize effectively from sources has long been recognized as crucial to academic success. Recent years have seen an increase of research interest into integrated writing tasks, from written sources as well as a combination of written and spoken sources because of their authenticity in measuring academic skills reflecting real-life academic circumstances (Plakans, 2009; Yang & Plakans, 2012). Because of their resemblance to actual assignments, integrated writing tasks are said to have a positive washback effect on EAP and English as a Foreign Language (EFL) instruction (Cumming, Lai, & Cho, 2016; Hirvela, 2011; Weigle, 2004; Yang & Plakans, 2012). The authenticity and validity of reading-to-write (R2W) and reading-and-listening-to-write (RL2W) integrated tasks have led to their adoption into high-stakes academic assessment certificates, such as the TOEFL iBT and the IELTS.

However, integrated writing tasks present challenges to both first and second language (L1, L2) students, who struggle to develop the complex cognitive and metacognitive skills required to perform in them effectively. Particular difficulties have been reported in 'conceptually integrating' information from the different sources and in creating a new text that has been adequately 'transformed' linguistically and conceptually so as to meet task requirements (Boscolo, Arfé, & Quarisa, 2007, p. 422). Researchers reveal that students tackle these demands by resorting to a variety of writing strategies and have linked students' strategy use to variation in their integrated writing performance (Yang & Plakans, 2012) and their competence level in English as a Second Language (ESL). It is, therefore, noteworthy that researchers have not paid sufficient attention to SI and its effects on integrated writing performance. With

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the exception of Zhang (2013) who studied the effect of SI on intermediate level ESL students' synthesis writing, the feasibility and effectiveness of integrated task SI at the tertiary level is significantly under-researched.

In this paper, we report on the findings of a project involving a four-week explicit integrated SI intervention that moves the field forward, including visual material in integrated task assessment. While the construct of video-mediated integrated writing has proven difficult to define (Feak & Salehzadeh, 2001), we worked from the assumption that the video makes the communication situation more realistic, as most academic communication contexts involve both audio and visual input. So, we designed an explicit SI intervention around the construct components identified by Yang and Plakans (2012) aiming at investigating the effect of explicit SI on students' synthesis writing and the differences in their performance per CEFR level. The paper will proceed from a review of the literature that relates to the strategies involved in integrated writing, the arguments in favor of using video in foreign language learning and assessment and the effectiveness of strategy intervention. We then turn to the methodology of our study and the discussion of our findings. We conclude by suggesting teaching implications.

## 2. Literature review

### 2.1. Integrated writing strategies

In the L1 context, numerous researchers looking into synthesis writing draw on Spivey's (1990, 1997) constructivist model of discourse synthesis (e.g., Ascención, 2005; Kirkpatrick & Klein, 2009), which identifies three central operations that influence writing quality: *selecting*, *connecting*, and *organizing*. *Selecting* strategies involve making judgments of relevance identifying information relevant to the prompt and distinguishing between main and less important ideas while *Connecting* involves linking ideas from the different sources and elaborating on this connection. *Organizing* strategies are used by writers in both text comprehension and production when they make sense of the (written) input sources by activating their own prior knowledge and making use of the text organization pattern, and when they form the structure of their own writing. In the Yang and Plakans (2012) model these are incorporated in the discourse synthesis scale.

In the L2 context, research has also revealed two self-regulation categories; *monitoring* which involves writers identifying goals, making informed decisions and creating plans (Ascención, 2005; Plakans, 2009, 2010; Yang & Plakans, 2012; Zhang, 2013), and *evaluating* which entails writers reexamining what they have written by reconsidering the task requirement (Esmaili, 2002), making judgments of relevance and linguistic appropriateness. These types of strategies are metacognitive in nature and have been shown to influence writing performance positively by affecting the above mentioned discourse synthesis strategies.

The model proposed by Plakans (2009) for integrated tasks in L2 includes these two broad categories, *discourse synthesis*, and *self-regulation*, as well as a third component, *test-wiseness* (Cohen & Upton, 2007; Cohen, 1998), involving compensation strategies test-takers resort to when completing integrated tasks. Some examples of test-wiseness strategies are: verbatim language use (i.e., copying exact phrases from sources instead of paraphrasing them) and relying on a memorized template.

### 2.2. Video-mediated integrated writing

As noted in the introduction, a central advantage of integrated writing tasks over independent writing or tasks engaging separate modalities is authenticity. The inclusion of non-verbal elements to listening has been suggested to further enhance authenticity (Wagner, 2007) as most instances of spoken communication involve the interlocutors having eye contact and using paralinguistic information. Kinesic behavior, for example, gestures and facial expressions, (Kellerman, 1992) is significant in the interpretation of spoken communication; it constitutes the 'co-verbal' aspect which is as integral to communication as the verbal aspect. In fact, Burgoon (1994) highlights the fact that, when there is conflict between verbal and non-verbal cues, the latter outweigh the former in interpretation. In addition, in the post-millennial generation, the use of video lowers the affective filter; it is a familiar mode of communication, having a positive influence on attitude (Progosh, 1996; Wagner, 2010).

To include visuals, especially video, in teaching makes sense on both pedagogical and theoretical grounds. For one, video is an integral part of the Multiliteracies pedagogy (Cope & Kalantzis, 2009), which views human cognition as determined by context and holds that education must reflect the "multimodal realities of the new media and broader changes in the communications environment" (p. 13). Secondly, the use of visuals in teaching EFL has been shown to increase student motivation (Oxford, Park-Oh, Ito, & Sumrall, 1993) and facilitate mental processing because it mirrors real life communication (Salomon, 1984) and enhances cross-cultural awareness (Kramsch, 1993). Visual or paralinguistic information is considered by Vandergrift (2007) part of L2 learners' compensatory mechanism, along with world and cultural knowledge.

On the other hand, the video-mediated integrated task is complex and difficult to define (Taylor & Geranpayeh, 2011), which raises concerns regarding the rating rubric as well as the impact the task may have on test-takers. Critics argue that it engages more modalities on the part of the learner and, while these may facilitate comprehension for some, for others they may complicate it (Bejar, Douglas, Jamieson, Nissan, & Turner, 2000; Gruba, 1999; Ockey, 2007). An initial attempt at defining the concept of video-mediated integrated writing has been made by Papadopoulou, Machili, and Kantaridou (in press) by determining the component strategies that will become the focus of SI. It was found to include: a) *input-focused* strategies: making use of text structure to understand meaning, locating and condensing relevant information, b) *output-focused* strategies: proofreading at both content and language levels and compensation strategies, and c) *non-verbal* content and context-related strategies employed to comprehend the video input.

While acknowledging the concerns above, we hold that the use of video in assessment and academic assignments is highly advantageous, especially in L2 writing on two grounds: "not only would the tasks more closely simulate the characteristics of

authentic spoken language, but the inclusion of the visual channel in presenting the spoken input might lead to more construct relevant variance in the assessments, allowing for more valid inferences to be made from the results of those assessments" (Wagner, 2007, p. 67). In this light, we attempt to investigate the effect of SI in a video-mediated integrated task on students' writing performance and the way it differs per competence levels.

### 2.3. Integrated writing (strategy) instruction effectiveness

Explicit SI typically involves raising awareness of the strategy to be taught, modeling/ demonstration, multiple practice opportunities, evaluation of strategy effectiveness and transfer to new tasks (Rubin, Chamot, Harris, & Anderson, 2007). The intended outcome of the SI is to provide students with declarative and procedural knowledge (Wette, 2010) and motivation to become aware of and regulate their own writing processes (Fidalgo, Torrance, Rijlaarsdam, van den Bergh, & Álvarez, 2015). Its effectiveness has long been demonstrated with regard to the different skills and general language learning (Taylor, Stevens, & Asher, 2006; Vrettou, 2015), and it has been found to be more effective than other instructional approaches with primary and secondary level learners (Graham, McKeown, Kiuahara, & Harris, 2012). However, research into the effectiveness of SI in synthesis writing is still rather rare. Only a few studies concluded that the instruction of integrated writing tasks and students' writing performance are indeed related (see Zhang, 2013) while there is a lack of studies examining the effectiveness of SI into video mediated integrated writing.

Segev-Miller (2004) highlighted the importance of explicit SI. The study included strategy training along with practice of source processing and writing, raising awareness of evaluation criteria and actual evaluations of synthesis writing samples. Twenty-four elementary education in-service teachers participated in a one-semester intervention. The pre and post writing task were a literature review which the participants self-assessed, finding significant improvement in overall writing quality in the post task. The authors interpreted this to have resulted from modeling strategy use and from raising the participants' awareness of the assessment criteria.

Kirkpatrick and Klein (2009) tested the effect of a six-session SI intervention on a sample of 7th and 8th graders. The pre and post task involved compare-contrast synthesis essays on two counter-balanced topics. The experiment group received explicit SI using a planning table to organize source text information and wrote synthesis essays. Results indicated significantly better quality in the experiment group post-test, yet not sufficient improvement in text organization, possibly due to the brevity of the SI. However, the study highlighted the significance of using a planning tool to facilitate source text comprehension.

Boscolo et al. (2007) were the only ones to include an audio component in their synthesis writing with 52 tertiary education students. They examined the effect of 10 after-class workshops during which students listened to lectures, practiced writing, evaluated good and bad synthesis writing samples. Pre-test and post-test synthesis assignments were assessed in terms of informativeness (selection of appropriate information), integration (connection of information from source texts), and organization (cohesion and text structure). Although the study did not involve explicit SI in integrated writing strategies, the overall effect of the workshops was found to be positive in all aspects except integration.

In the L2 context, Zhang (2013) conducted SI into synthesis writing as part of an intensive English program at a U.S. university. The sample included 29 students divided in experiment and control groups, primarily Arabic and Chinese L1 speakers. The SI for the experiment group consisted of five sessions of discourse synthesis writing integrated into the existing course curriculum. Zhang's study broke the integrated writing task into manageable steps, reading source texts, identifying main ideas, rereading the source texts to find connections between them, selecting information, organizing information, and finally writing the essay. Results showed an overall benefit in L2 students' synthesis writing, both in terms of holistic and analytic rating, regardless of the overall English proficiency level. Implications for teaching included the significance of teacher scaffolding by means of reading guides, connection exercises, teacher feedback and monitoring practice.

The studies above highlight the positive effect of instruction on the overall quality of students' synthesis writing, and two of these bring to light the strong benefits of explicit SI for effectively managing the highly complex task of integrated writing. Drawing on a social-cognitive model of learning, explicit SI aims at developing students' cognitive (e.g., selecting and connecting information from sources) and metacognitive skills (e.g., making plans, revising). The complex process of deconstructing the information of sources and reconstructing a new text is facilitated by providing training broken down into manageable steps: teaching and modeling the strategies first, practicing, and then revising them (Fidalgo et al., 2015). Largely due to the employment of these manageable steps, researchers have found weaker learners to benefit more from explicit SI than other instructional methods (e.g., Rogers & Graham, 2008).

However, it is worth noting that although all the instructional studies above clearly indicate the positive effect of instruction on the overall quality of students' synthesis writing, the effect on the particular aspects of writing warrants further investigation as not all of them have been shown to improve to the same extent. For example, particular areas of improvement were shown in selecting, connecting and citing information in Zhang (2013), text structure in Kirkpatrick and Klein (2009), and selection and organization but not integration in Boscolo et al. (2007). Results seem to suggest that the strength of the effect may lie on the subtle nuances of the focus of the instruction on the respective areas.

In the L2 context, results remain inconclusive as to the impact of language proficiency on the quality of integrated writing and in particular on the use of verbatim, i.e. using exactly the same words as were originally used, (Campbell, 1990; Gebril & Plakans, 2009; Johns & Mayes, 1990) and use and amount of citations (Mansourizadeh & Ahmad, 2011). The ways in which language proficiency may affect performance on the integrated writing task relate to both the input and the output. With respect to the first, the degree to which the source content is adequately understood is known to strongly depend on L2 proficiency (McDonough, Crawford, & De Vleeschauwer, 2014; Plakans & Gebril, 2012). With respect to the latter, rephrasing will certainly build on the linguistic means (wealth of vocabulary and structures) available to the test-taker. In this sense, limited vocabulary size will undermine the non-native

students' comprehension of the sources as well as the length of the output (Schmitt, 2005) and the independence of the paraphrase (Keck, 2006), quotation, paraphrase or summarized rendition of the original. Thus, students may resort to patchwriting, a mechanical paraphrase, mainly focusing on word substitution with synonyms and alternating grammatical structures (Howard, 1993) out of insecurity about their linguistic means and limited understanding of the subject.

The difficulties students with a lower L2 proficiency appear to have in integrated writing might suggest that integrated writing tasks are only suitable for students at or above a certain threshold level of L2 proficiency below which they may not be able to perform effectively (Cumming et al., 2016), hence the use of integrated writing tasks in university admission exams such as TOEFL iBT and IELTS. At the same time, although the claim above holds strong, there is also evidence that the differences between L1 and L2 students are insignificant, indicating the different points in the development of their integrated writing skills, and are difficult to identify rendering the evidence inconclusive (Hyland, 2009; Keck, 2014).

Yet another significant parameter in the students' perception of acceptable source use is the educational and cultural context. The literature has found that students' prior programs of study and educational experiences accounted for differences in their perceptions about appropriate citation practices (Cumming et al., 2016). Furthermore, a number of researchers argue that 'cultural practices' such as text memorization and the absence of explicit teaching of paraphrase and citations can explain why students in some countries tend to refrain from citing their sources (e.g., Keck, 2014; Pennycook, 1996; Shi, 2004; Sowden, 2005). While not abiding by the essentialist perspective of 'cultural differences', possibly hiding political agendas (Kubota, 2004, 2014), we view 'cultural and educational influence' as the prior transient educational experiences students have, which appear to affect particular stages in their development of writing practices. Along these lines, in educational contexts such as the Greek secondary school of the last decades, which, despite recent educational reforms, places emphasis on rote learning, memorization and single sources of knowledge (the authority of the teacher or the designated course book), many students appear to lack a clear perception of what constitutes plagiarism. In fact, mere listing of the sources used may amount to sufficient acknowledgement.

Against this backdrop, we see the use of explicit SI in complex and particularly challenging integrated writing tasks as highly promising. Hence in this study we report on the explicit SI intervention carried out and the observed effect on EFL writing performance at the video-mediated integrated task.

### 3. Method

#### 3.1. The participants

In order for the findings of the research to be better understood, we will briefly describe the Greek secondary education setting, our participants' educational background. Greek secondary education is traditionally teacher-centered and focused on rote learning and high-stakes university entrance exams. Although the latest reforms of Greek secondary education (in 2002, 2013, and 2016) had stipulated development of critical thought and encouragement of a spirit of 'learning to learn' as goals, the majority of teachers did not alter their instructional practices to meet these goals. The reforms may have proposed the incorporation of group projects and use of multiple electronic sources in the classroom, but many of the perennial problems initially identified in the past still persist a decade later: "the single textbook, the teaching of all subjects in the same classroom, the lack of educational media and new technologies as well as the teacher's limited or inadequate in-service training" (Flouris & Pasias, 2003, p. 87; Liapikou, 2017). Little guidance is provided as to citation standards and appropriate ways of using sources. Plagiarism is barely mentioned and little practice is offered in ways to appropriate a source and integrate it into the new text. For a long time, tertiary education has followed along the same lines: overly large classes, few opportunities for team and research work, and a single final assessment usually requiring reproduction of factual knowledge from the designated course book. It is, therefore, fair to assume that students who enter university have significant lack of both declarative and procedural knowledge relating to synthesis writing.

The sample consisted of 118 Greek students (49.2 % male, 50.8 % female) from three University Departments: Accounting and Finance (43.2 %), Business Administration (12.7 %) and Economics (44.1 %). It was divided into experimental (56.8 %) and control groups (43.2 %). The students' TOEFL ITP scores were turned into levels of competence according to CEFR (Council of Europe, 2001). The majority of the participants were at an intermediate B-level of competence (61.9 %), followed by 38.2 % advanced C-level students.

#### 3.2. Research questions and design

This paper is part of a larger project on integrated writing strategies, the impact of SI on performance and reported strategy use, and the impact of motivation on performance on an integrated task. This paper is aimed at investigating how SI affects students' synthesis writing performance. In particular, it aims at investigating the following research questions:

RQ1: What is the effect of SI on students' synthesis writing as indicated in their overall writing performance scores?

RQ2: What is the effect of SI on students' synthesis writing as indicated in each of the scoring rubric scales?

RQ3: What are the differences in their performance per student's competence level?

In order to answer the research questions, we implemented a quasi-experimental design randomly assigning students of the three departments into experimental and control groups (see Table 1). Both groups used similar material, and the same procedure was followed in terms of attendance requirements, tasks and grades. However, only the experimental group received explicit instruction in the strategies used in synthesizing information from a text and a video. The students completed the same reading-and-watching-to-write (RW2W) synthesis task, pre and post intervention and completed a self-report questionnaire on the strategies they used while

**Table 1**  
Participants' demographic characteristics.

Gender		Department		CEFR level	
Male	58	Acc/Finance	51	B	73
	49.2 %	Control gr.	43.2 %		61.9 %
Female	60	Bus Admin	15	C	45
	50.8 %	Experiment gr	12.7 %		38.2 %
		Economics	52		
		Experiment gr	44.1 %		

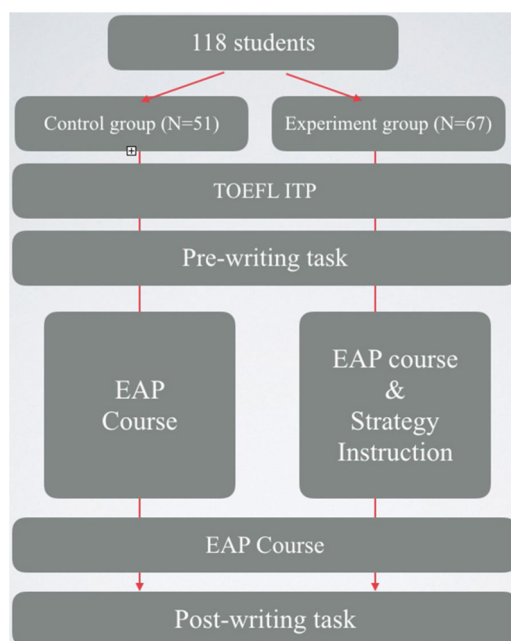
performing the task. The intervention was incorporated in the syllabus of the EAP course taught at the University of Macedonia, Thessaloniki, Greece. The course is taught four hours per week for 13 weeks. The self-report questionnaire used for the teaching of strategies was an adaptation of the [Yang and Plakans \(2012\)](#) Strategy Inventory for Integrated Writing (SIIW), supplemented with strategies for video-mediated integrated tasks (for more on the factor analysis of the questionnaire see Author B, Author A, Author C, forthcoming). Four researchers were involved in the design of the project and the marking of the writing task, three of whom were involved in the teaching of the experiment and control groups. The TOEFL ITP test was administered to all participants to measure their general academic English competence. For a visualization of the research procedure see [Fig. 1](#).

### 3.3. The strategy instruction intervention

The intervention lasted 7 two-hour sessions. Drawing on [Yang and Plakans' \(2012\)](#) conceptual structure, we focused on selecting, organizing and connecting strategies. In each session, we followed the five steps suggested by the international SI literature ([Rubin et al., 2007](#)): (1) awareness raising, inviting the students to think of the strategies they already use at similar tasks, (2) presentation and modeling of how the strategy works, (3) practicing the strategy in class, (4) evaluating the strategy effectiveness, and (5) reviewing the strategies taught providing links to previous and following sessions. The implementation of these steps can be clearly seen in the sample lesson plan in Appendix A.

In all the sessions students read a passage, watched a video on the same topic from a different perspective and were then asked to perform a synthesis task similar to the ones in the TOEFL iBT test: first identify the relation of the two sources and then elaborate. The prompt specified that they were not asked for their personal opinion. For example, they read a passage on the pros of globalization, they then watched a video on the cons of globalization, and then they were asked to write and explain the relation of the two sources, in this case a relation of contrasting perspectives.

The material of the control group consisted of analyzing speeches from the course book. In order to provide as minimal a disruption as possible, the schedule remained faithful to the normal course content. The in-class assignments students completed were worksheets involving the content outline to facilitate comprehension of the structure of the speeches and their rhetorical features



**Fig. 1.** Research procedure.



including introductory and concluding techniques, cohesion markers (lexical and structural), means of establishing credibility, and means of attracting the audience's attention. The third week also involved writing a paragraph of comparison/contrast of the content of the two speeches examined. The teachers also paid attention to linguistic aspects and provided practice in the lexical and grammatical items that emerged from the speeches.

Each session in the experiment groups provided training in different types of strategies (See Appendix B). The first two sessions developed selecting strategies: selecting information relevant to the task, selective note-taking according to the task requirements from both a reading and a video source. The following two targeted organizing strategies: highlighting textual organization for comprehension, as well as formulating an organized mental representation of the selected information in outline and mind map from a reading passage and a video. With regard to the writing process, teachers showed students two ways of juxtaposing information, the compare and contrast and the point by point method. The next two sessions modeled and practiced strategies related to the production of a coherent text such as the construction of a topic sentence conveying the relation between the two sources to be further analyzed and the use of appropriate linking devices. The final, seventh session, involved a consolidation of strategies practiced and an evaluation of samples according to the scoring rubric parameters, content (information), organization (presence of introductory sentence and cohesive devices), language and verbatim source (reference to sources and paraphrasing quality). In the eighth session, students completed the video-mediated synthesis task and the two strategy inventories.

### 3.4. The writing-and-watching-to-write (RW2W) task

The RW2W task included reading a passage and watching a speech in a video on the topic of economic growth. The reading passage and the video were taken from online sources presenting the benefits and disadvantages of economic growth in a simplified way to cater for EFL students from a variety of levels. The choice of topic was considered to be general enough and appropriate for our students as well as relevant to all their specific disciplines. In the task students were asked to write a 150-to-200-word piece presenting the points of contrast (see Appendix C). The same task was given to the students in the pre and post phases to render the results readily comparable in accordance with quasi-experimental research design (Campbell, 1957). Students were not aware of the fact that they would be examined in the same task prior to its post administration. The same task was used for both the experimental and control groups. Teachers familiarized students with the nonverbal and paralinguistic features both prior and during the SI intervention as part of their EAP course.

### 3.5. The scoring rubric

The scoring rubric we used is presented in Appendix D. It was adapted from the Integrated Writing Scoring Rubrics (Yang & Plakans, 2012) as follows: content, organization and language scales were kept and rated 0–5. However, verbatim use was modified and replaced by two scales: verbatim language use, rated 0–2 (referring to the extent to which plagiarism was avoided) and citation creativity, rated 0–3, referring to the variety of means used by the students to refer to the sources. The rationale was based on previous research and the pilot stage findings: in their comparison of verbatim across different integrated writing tasks, Cumming et al. (2005) observed that verbatim language use did not occur as frequently in RL2W tasks as it occurred in R2W tasks because in the latter the test takers have more visual access to the source text and more time available to study and understand the passage while in the former task they had to rely solely on their memory of the listening material (p. 40). Our findings in the piloting stage, where this distinction had not been made, suggested that the single verbatim scale failed to differentiate students, as the watched sourced was not readily available to entice copy-pasting. Instead, we qualified the scale into 0–2 points for avoiding plagiarism and awarded 0–3 for creativity in source referencing. The total score was marked on a scale of 0–20.

The four researchers who designed the project (three of whom taught the experiment and control groups) also rated the writing assignments. They all had extensive experience as EAP instructors and raters of integrated writing assignments. In the marking stages papers were masked, given code numbers rather than names. To establish marking consistency the researchers/raters held several meetings where they clarified and agreed upon the rating criteria. Before the actual scoring, batches of 10 papers from each department were scored by all raters to determine variations in the perception of the rating scale as well as inter-rater reliability. All papers were examined by two raters. Consistency in the paper ratings was 85 % similarly to that of other relevant studies (e.g., Cumming et al., 2005). No difference above 0.5 was noticed except in rare cases, where the average of the two scores was used (Nguyen & Gu, 2013).

## 4. Results and discussion

RQ1: What is the effect of SI on students' synthesis writing as indicated in their overall writing performance scores?

We initially ran ANOVA to check the differences in the pre-post overall performance in the two groups. The results indicated that the differences were not significant in the pre stage ( $F(1,117).409, p = .524$ ), but they were significant in the post stage ( $F(1,117).5.816, p = .017$ ). This means that the two groups were similar in their synthesis performance at the pre stage, but they were significantly different at the post stage.

General Linear Model (GLM) repeated measures were also run with the two groups as independent variables and the writing overall performance in the pre/post stages as dependent. Put simply, this analysis is used to compare both groups of students at two different stages (pre and post, the time variable) in relation to their respective performance in contrast to the one-way ANOVA, which examines each group separately. The within subjects test indicated that the differences in the writing performance are significant ( $F$

(1, 116) = 12.74,  $p = 0.001$ ) and the effect size was very high ( $\eta^2 = .099$ )<sup>1</sup> with the experimental group ( $M = 16.46$ ,  $SD = 2.83$ ) scoring higher than the control ( $M = 15.14$ ,  $SD = 3.12$ ) in the post stage. The difference between the scores in the experimental and control groups may seem minimal in terms of numbers, but the fact that their comparison demonstrated statistical significance means that the synthesis performance of the experiment group improved distinctly more than that of the control group, and this difference is not random (see Table 2). This indicates that the SI intervention was effective.

Further GLM repeated measures analyses for the total writing performance indicated statistically significant differences in the two groups from the pre to the post administration in favor of the experimental group even when placing the actual TOEFL ITP final scores as a covariate<sup>2</sup> (see ANCOVA results, Table 2). By using the TOEFL ITP as a covariate we wanted to eliminate the effect of the students' general academic English competence' in order to highlight the effect of the specific strategy instruction. The results remain significant in the post stage in favor of the experiment group ( $F(1,115) = 8.034$ ,  $p = .005$ ). The effect size has reduced ( $\eta^2 = .065$ ), but it is still significant ( $p = .005$ ). The effect size of the covariate is high ( $\eta^2 = .431$ ) and significant ( $F(1,115) = 87.067$ ,  $p = .000$ ). This means that the improvement from the pre to the post stage particularly for the experiment group remains significant despite the participants' different overall academic English competence (Table 2, last two columns). The fact that the difference between the control and the experiment groups is widened in the ANCOVA results emphasizes the effect of the SI intervention (ANOVA post: control  $M = 15.14$ , experiment  $M = 16$ ; ANCOVA post: control  $M = 14.39$ , experiment  $M = 17.03$ ). The performance of the experiment group improved substantially more having been exposed to the SI. In fact, this triggered our next two RQs, in which we try to pinpoint which aspect of students' performance was positively affected (RQ2) and which level students benefited more from it (RQ3).

Although both groups improved their writing performance from the pre to the post stage, the experiment significantly outperformed the control group at the post stage. This is consistent with the findings of other instructional intervention studies in synthesis writing (e.g., Kirkpatrick & Klein, 2009; Wette, 2010; Zhang, 2013). Using a R2W integrated task with ESL students, Zhang (2013) found that the experiment group, who received instruction and practice in synthesizing strategies, improved much more than the control group, who did not. Similarly, Kirkpatrick and Klein (2009) found that L1 students who were taught synthesis strategies outperformed the ones who had not received such instruction in a R2W integrated task at the post stage. Similar results were found in Segev-Miller (2004) and in Boscolo et al. (2007) SI study, the latter incorporating a listening component. This study, then, strengthens prior research by showing that SI can have a positive effect on overall quality of integrated writing both in L1 and L2 teaching contexts. In light of the multi-faceted and variable nature of the teaching approaches and learning activities employed in other intervention studies (Cumming et al., 2016), this is a finding to be foregrounded. The study also extends prior research by indicating the effectiveness of SI when a video component is incorporated. The quality of students' overall writing can be improved in integrated writing tasks that more closely simulate authentic spoken language and have more construct relevance in their assessment than those using mere listening and reading sources. The fact that our findings still remain strong given the participants' TOEFL ITP scores as a covariate points to the benefits SI with a video component can have for all students attending EAP in regular classrooms.

RQ2: What is the effect of SI on students' synthesis writing as indicated in each of the scoring rubric scales?

We also ran GLM repeated measures ANOVAs with the two groups and each of the scoring rubric scales, that is content, organization, language, citation and verbatim language use (see Table 3).

As shown in Table 3, improvement from pre to post stages was evident in all components. However, in *content* (pre  $M = 2.98$  to post  $M = 3.57$ ) the differences are not statistically significant, which means that the effect may be due to chance although the size of the improvement from pre to post may seem relatively large. The components of *organization* ( $F(1,116)22.034$ ,  $p = .000$ ,  $\eta^2 = .160$ ) and *language use* ( $F(1,116)11.286$ ,  $p = .001$ ,  $\eta^2 = .089$ ) improved significantly from pre to post in each group (signified by the single asterisk) but not between the groups. In other words, the differences in the control group from the pre to the post stage are not random and neither are they in the experiment group. The lack of statistically significant difference between the control and the experiment groups pre and post can be attributed to other factors such as the overall teaching and relevant classroom practice all the participants were exposed to and the cognitive and linguistic benefits they derived. This means that in these two components no benefit is discernible of the SI intervention per se as the performance of both groups improved in the post stage. *Organization* was explicitly taught in sessions 3 and 4 and more indirectly in sessions 5 and 6 of the experiment group. It was also discussed in the process of understanding the content and flow of argument of the speeches taught to the control group. Improvement in aspects of organization was similarly noticed in prior studies not all of which employed explicit instruction in it or to the same extent. For instance, cohesion and text structure was improved in the Boscolo et al. (2007) study which did not use explicit SI and connecting was improved in the Zhang (2013) study, where SI was explicitly taught. The improvement in *language use* was also expected given the instruction and practice both groups received in lexis and structure in most of their sessions. Students did not show any statistically significant improvement in *content* because they may have overlooked it, focusing and struggling to acquire more unfamiliar and demanding aspects of writing like paraphrasing, citations etc. Similar improvement in the reading and writing performance of the control group is observed in Zhang's (2013) research and it is accounted for in terms of the overall classroom practice not related to the SI intervention.

Where we do see considerably more improvement in the experiment group in contrast to the control group is in the *citation* ( $F$

<sup>1</sup> The effect size ( $\eta^2$ ) is considered strong when it is closer to 1. As a rule of thumb, it is low at about 0.01, medium at about 0.06 and large at about 0.14 level.

<sup>2</sup> A covariate is a variable characteristic of the participants that may affect the results of an experiment and it is used to increase the accuracy of the results by eliminating that characteristic from the results.

**Table 2**

Means in the total writing score in the pre/post stages for the two groups.

		Anova results			Ancova results	
Group		Mean	SD	Std error	Mean	Std error
pre	Control	14.55	2.98	.47	13.65	.38
	Experiment	14.15	3.62	.41	14.83	.33
post	Control	15.14*	3.11	.41	14.39*	.35
	Experiment	16.46*	2.83	.36	17.03*	.30
Pillai's trace		12.740			8.034	

\*  $p < .005$ .**Table 3**

Means (SD) in the writing components and total writing score in the pre /post stages for two groups.

	Control		Experiment	
	Pre	Post	Pre	Post
Content	2.98 (1.03)	3.57 (1.06)	3.09 (1.04)	3.67 (0.94)
Organization	3.76* (0.83)	3.96* (0.87)	3.25* (1.09)	4.28* (0.81)
Language	3.90* (0.98)	3.76* (0.86)	3.55* (1.06)	3.87* (1.01)
Citation	2.14** (0.77)	2.24** (0.76)	2.18** (0.93)	2.70** (0.57)
Verbatim	1.76** (0.42)	1.61** (0.56)	1.84** (0.44)	1.91** (0.28)

\* Significant within group only.

\*\* Significant within and between groups.

(1,116)7.833,  $p = .006$ ,  $\eta^2 = .063$ ) and *verbatim* ( $F(1,116)5.089$ ,  $p = .026$ ,  $\eta^2 = .042$ ) scales, which suggests that the intervention was mostly effective with regard to those components of synthesis writing. In short, the results in the improvement in these two scales for the experiment groups can be attributed to the specific SI, in contrast to the results in other scales, which could be due to other factors. Zhang (2013) also found that use of citation and paraphrase in the post test writing of experiment group was much better than that in their pre-test writing and that of the post-test writing of control group. The findings indicate that the SI intervention was successful in the short term in sensitizing learners regarding citation and plagiarism standards of the RW2W task. SI provided them with both the declarative knowledge (what the legitimate source use conventions are) and, most importantly, the procedural knowledge (how to meet the citation requirements), through practice in paraphrasing techniques (Wette, 2010, p. 3). This is of particular significance given the short duration of the intervention. The fact that the improvement of student performance in the *citation* and *verbatim* scales is statistically significant, i.e. not coincidental, may lend itself to two interpretations: on the one hand, it may indicate teacher effect. That is, as EAP teachers in Greek tertiary education we may have emphasized plagiarism and citation standards as a response to their absence in secondary education and as an attempt to help them shake mistaken beliefs and unlearn inappropriate usage of sources (e.g., copy-paste/verbatim as an acceptable practice). Similar misconceptions have been reported in the literature (Cumming et al., 2016; Pecorari & Petrić, 2014). For instance, some students find it appropriate to copy original phrases as long as they cite them (Davis, 2013), and others do it to please their tutor (Harwood, 2009). On the other hand, the improvement in *citation* and *verbatim* may reflect students' perception effect; students may have paid more attention to concepts that they were unfamiliar with, rather than aspects of content and organization, which they may have felt they were already good at, given their level of competence. Several studies have shown that students from different cultural, educational and disciplinary backgrounds make different use of citations and attribute different importance to them (e.g., East, 2005; Mansourizadeh & Ahmad, 2011).

RQ3: What are the differences in the students' writing performance per student's competence level?

We ran GLM repeated measures to look into the variable of the students' CEFR level, as that was measured in their performance in the TOEFL ITP test. The analyses both for the intermediate (B level) and advanced (C level) level students indicated that the effect of the intervention was high and significant within each group and between the experimental and control groups (Table 4).

Our findings concerning the differences in writing performance per competence level indicate significant improvement in writing a contrasting viewpoints integrated task both for intermediate and advanced students assessed by means of an analytic scale. Our findings corroborate Zhang (2013) who observed that SI improved synthesis writing quality in intermediate students, albeit in that case in a problem-solution essay, assessed by means of a holistic rubric. The size of the improvement in the scores of the experiment group was taken to signify that it was the result of explicit SI. This is a positive finding indicating that even short term instruction can help students of both intermediate and advanced competence to improve in their performance of integrated tasks. This study highlights the need for specific instruction in integrated tasks given the fact that intermediate level students comprise the majority of EAP students in an EFL context.



**Table 4**

Means and (SD) in writing performance of B- and C-level students in the pre/post stages in the two groups.

	Control		Experiment	
	Pre	Post	Pre	Post
B-level students	12.76	13.84	13.15	15.60
N = 73	(2.53)	(2.47)	(3.58)	(2.76)
Within-subjects effect: $F(1,71) = 28.113, p = .000, \eta^2 = .284$				
Between-subject effects: $F(1,71) = 4.266, p = .043, \eta^2 = .057$				
C-level students	16.27	16.38	16.68	18.63
N = 45	(2.31)	(3.20)	(2.26)	(1.57)
Within-subjects effect: $F(1,43) = 8.047, p = .007, \eta^2 = .158$				
Between-subject effects: $F(1,43) = 6.347, p = .016, \eta^2 = .129$				

We used an analytic scoring rubric because it involves finer differences than a holistic one (Zhang, 2013). Holistic rubrics do not accurately capture the true writing profile of the student or test taker (Knoch, 2011). They cannot highlight students' stronger and weaker aspects or potential teaching effects as they include content (relating to the task prompt), citation-, organization- and language-related parameters in a single rating scale in the rubric. Perhaps future research can address the difference between analytic and holistic scoring rubrics in diagnostic value and assessment accuracy.

## 5. Conclusion and teaching implications

The present paper begins from the premise that teaching integrated writing is meaningful in an academic context in that such tasks are realistic and closer to the actual language use than tasks where the four language skills are separated. Since integrated language tasks are complex and multifaceted, students would benefit from explicit SI that will raise their awareness of the more appropriate strategies specific to the integrated writing task and provide practice in them. By focusing on specific academic and professional-like tasks, task-based teaching can have practical value for students and potentially promote learner autonomy in the longer term.

The reasons why we propose the integration of a video rather than a listening component as a delivery mode in the teaching of integrated writing is in the interests of increased authenticity and possibly enhanced student motivation. In the multimodal reality of the knowledge economy the learning process needs to be enhanced with a wealth of communication modalities, visual, gestural, social and cultural. Having said that, unless the construct of video mediated integrated writing is accurately defined, EFL instructors, researchers and test administrators will probably remain hesitant to use video in teaching (and testing) integrated writing. However, further studies may cast more light into the construct components and/or determine whether these findings can be replicated.

In line with previous studies, the research found that a 7-session explicit strategy instruction was beneficial/ effective, leading to improvement in the students' overall writing performance as well as their performance on the particular scales. This is rather significant given the finding in the L2 writing literature that L2 learners find paraphrasing particularly challenging both for inadequate vocabulary means and for the lack of knowledge of appropriate citation techniques (Davis, 2013). Our findings seem to indicate that students who do not yet fully know when, how and why to use sources appropriately due to differences in culture, educational context, and L2 competence can be greatly helped through scaffolding even in a short space of time. We highlight the benefits of integrated SI for students at both advanced and intermediate level, the latter comprising the majority of university students. Against this backdrop, we strengthen prior findings on the effectiveness of explicit SI and further propose the use of video as a direction to be taken up by research in the future.

The stages of the explicit model of SI used in the present project, that is, raising students' awareness of the utility of strategies, focusing on a particular strategy cluster and modelling these particular strategies, providing scaffolding to the students, having them practice the strategies independently and then evaluating their use, prove beneficial in building effective learning practices in the students. Particularly essential in this process is the provision of accurate and immediate feedback on the activities from every session. Strategy training also equips learners with beneficial long-term habits for language learning.

A limitation to note is the fact that the SI instruction effect may be short-term due to the relatively short duration of the intervention and repeating the post test six months later may have yielded different results. As SI interventions of short duration are encountered in the literature (Zhang, 2013), further research can elucidate whether longer interventions might have longer lasting effects. Also, incorporating qualitative methods in our design such as interviews with participants that are representative of every CEFR level might also have enriched our findings about the kind of difficulties students of different EFL competence level face and how they deal with them. It might also provide more insight into the types of skills that are activated in video-mediated comprehension and help establish construct validity.

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## Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.jslw.2019.100708>.

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