



## The effect of individual and collaborative writing on fluency, accuracy, and complexity of writing performance of Iranian intermediate learners: Mediating role of multimodal instruction

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### 1. Introduction

The main purpose of the present study was to find out the possible effects of multimedia teaching on the three writing qualities of complexity, accuracy, and fluency (CAF) of the learners when writing individually or in collaboration with others. According to Cohen (2003), the way through which a learner does the task of writing is an essential factor in successful use of the cognitive and metacognitive processes associated with writing tasks, and this is, in fact, the reason why the researchers of the current inquiry focused on multimedia teaching, which means using videos, clips, movies, etc. in teaching, in carrying out this research. A further point is that as Wigglesworth and Storch (2012) asserted, students are frequently asked to work in pairs or groups to fulfill written assignments and this permits them to pool their linguistic resources since they have the opportunity to consult each other about different ideas, ways of providing the ideas, and even grammatical problems they may have in expressing the ideas.

### 2. Materials and method

in order to conduct the present research and to answer whether or not the writing modality mediated the writing complexity, accuracy, or fluency of the learners, that are introduced as important issues regarding writing, an Oxford Placement Test (OPT; 2007), a writing pretest, and a writing posttest were utilized. That is, 60 intermediate male and female Iranian EFL students out of 100 were selected based on their performance on an OPT. These students were then divided into two experimental groups of individual and collaborative multimedia teaching each one consisted of 30 students. Learners of both groups wrote a descriptive essay as their

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pretest, benefitted from eight similar sessions of instruction through multimedia with the difference in the modality through which they did the act of writing (i.e. whether the learners of the two groups worked individually or collaboratively), and then wrote another descriptive essay as their posttest. Note that the topics of both the pretest and the posttest were based on the content of their course book and the topics covered throughout the instruction sessions. Then, their compositions were scored based on the following specific formulae proposed by Skehan and Foster (1997) for CAF:

Total number of errors divided by t- unit = accuracy

Total number of separate clauses divided by total number of AS- unit = complexity

The compositions were also scored based on an evaluation rubric with which two raters assigned a whole score to each essay with the aim of calculating the reliability index of the writing pretest and posttest. Therefore, the present study was a pretest-posttest quasi-experimental research being run with two experimental groups.

### 3. Results and discussion

The data gathered was then given to SPSS to be analyzed through a MANOVA and three repeated-measures two-way ANOVAs and decide about a major and its three minor research questions. The main tables presenting the results are:

**Table 1. Multivariate Test of the Pretest and Posttest of Complexity, Accuracy, and Fluency Writing of the two Groups**

	Effect	F	Sig.	Partial Eta Squared
Wilks' Lambda test	Group	45.93	.00*	.54
	Time	2.84	.04*	.07
	Time * Group	1.24	.29	.03

**Table 2. MANOVA on the Pretest and Posttest of Complexity, Accuracy, and Fluency Writing of the two Groups**

Source	Measure	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group	Complexity	.63	1	.63	4.49	.03*	.03
	Accuracy	2.44	1	2.44	13.89	.00*	.10
	Fluency	354.21	1	354.21	92.20	.00*	.44
Time	Complexity	.37	1	.37	2.62	.10	.02
	Accuracy	.53	1	.53	3.03	.08	.02
	Fluency	16.86	1	16.86	4.39	.03*	.03
Time * Group	Complexity	.15	1	.15	1.10	.29	.00
	Accuracy	.01	1	.01	.10	.74	.00
	Fluency	2.41	1	2.41	.62	.42	.00

**Table 3. Tests of within and between Subjects Effects of Writing Complexity in the Pretest and Posttest of the Individual and Collaborative Groups**

Effect		Value	F	Sig.	Partial Eta Squared
Time	Pillai's Trace	.158	10.85	.00*	.15
Group			2.55	.11	.04
Time * Group	Pillai's Trace	.07	4.57	.03*	.07

**Table 4. Tests of within and between Subjects Effects of Writing Accuracy in the Pretest and Posttest of the Individual and Collaborativd Groups**

Effect		Value	F	Sig.	Partial Eta Squared
Time	Pillai's Trace	.34	30.61	.00*	.34
Group			7.31	.00*	.11
Time *	Pillai's Trace	.01	1.05	.30	.01
Group					

**Table 5. Tests of within and between Subjects Effects of Writing Fluency in the Pretest and Posttest of the Individual and Collaborative Groups**

Effect		Value	F	Sig.	Partial Eta Squared
Time	Pillai's Trace	.21	16.23	.00*	.21
Group			53.31	.00*	.47
Time *	Pillai's Trace	.03	2.32	.13	.03
Group					

The results of Tables 1 to 5 showed that participants of both groups benefitted from multimedia teaching to a considerable extent while individual group outperformed the other slightly on the posttest of writing fluency. That is, providing the learners with multimedia instruction while working either individually or in groups are good ways of helping them write more complex, more accurate, and more fluent. Therefore, multimedia teaching could be considered a useful way of helping learners develop their writing ability. More importantly, no difference whether writing individually or in groups, when multimedia teaching is applied, the students' writing ability (i.e. writing complexity, accuracy, and fluency) will improve. Such conclusions were in line with other studies previously carried out by scholars such as Elfiza et al. (2021), Hum (2021), Mashhadi et al. (2021), Parrella et al. (2021), Pham (2021), Safdari (2021), etc. who worked on multimedia and writing collaboratively and came up with almost the same results.

#### 4. Conclusion

In conclusion, the information derived from this study can inspire educators' innovation in the EFL teaching to improve students' English writing skill using more innovative and modern ways of teaching such as multimedia. It was assumed that findings of this study could also assist the teachers and teacher trainers to use multimedia teaching in their classes for the sake of developing the Iranian EFL learners' ability of writing complexity, accuracy and fluency either individually or collaboratively. In addition, students themselves could benefit the present investigation since it can guide them to make use of various kinds of technologies to ease their own learning. Eventually, other studies can be carried out with other age ranges, other proficiency levels, other kinds of multimedia packages, and more importantly other language skills and components in order to see whether individual or collaborative ways of working are influential or not.

**Keywords:** Accuracy; Complexity; Fluency; Modality; Multimedia teaching; Writing