Comparative effect of online summative and formative assessment on EFL student writing ability

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ABSTRACT

This study investigated the effect of online summative and formative assessments on 130 Iranian English as foreign language (EFL) junior university students' writing ability. Three assessment interventions in writing performances of participants were investigated in 27 sessions using pretest/posttest time series design. The interventions included online summative assessment and online portfolio writing assessment conducted individually and online collaborative formative assessment. Data were collected from students' individual writing in both online summative and portfolio formative assessments as well as collaborative writing in online collaborative formative assessment in e-writing forum. The writing performances were assessed using International English Language Testing System (IELTS) rating scale. Paired sample *t*-test and analysis of covariance results indicated improved writing ability in all interventions and highest significant enhanced writing in online collaborative writing assessment intervention. The results imply that using engaging technology and techniques along with appropriate assessment strategies is a powerful way of making learning efficient.

1. Introduction

Education and assessment are so interwoven that one cannot have a comprehensive picture if either of them is missed from considerations. Assessment in either summative type (assessment for accreditation and validation) or formative one (assessment for learning) is at the heart of education (Gikandi, Morrow, & Davis, 2011). Summative assessment is assessing if the predetermined learning outcomes are achieved according to in- advance programed objectives or if the requirements are fulfilled to an accreditation or certification to be granted (Llamas-Nistal, Fernández-Iglesias, González-Tato, & Mikic-Fonte, 2013). At the heart of formative assessment is assistance in the form of feedbacks given to those involved in education which has no effect in vacuum unless it occurs in a learning context to which it can be addressed (Hattie & Timperley, 2007). The interaction between teacher and students or student with student in formative assessment mediates learning through scaffolding and assistance (Bennett, 2009) and learners give and receive feedbacks that fine tune their current level of language ability as it taps the process of learning rather than its product (Tarighat & Khodabakhsh, 2016).

With the advancement of information and communication technology (ICT) in education, unique feature of ICT in connecting people has received attention. ICT provides a medium in which learners can receive feedback through interaction and help them notice their

weakness and strength (Yilmaz, 2017). How advancement of information and communication technology (ICT) affected education and learning is well-documented (Vo, Zhu, & Diep, 2017). Not equally well-documented in research is how ICT has advanced assessment.

Looking to the future of e-assessment, Bennett (1998) describes three generations in e-assessment. The first one is using designs based closely on paper-based tests which are conducted online. The second generation includes multimedia, constructed response, automatic item generation and automatic scoring. The study by Llamas-Nistal et al. (2013) introduced a tool by which classical exams are blended to digital devices where learners have classical exams and provided by automated grading and statistical results and reports accessible anytime. The timely reports the device produces are summative online assessment helping learners to shift from classical exams to digital online assessment. Another device proposed by Rashad, Youssif, Abdel-Ghafar, and Labib (2008) is EAT; an electronic assessment system which provides information about students' answers and time to answer. Another e-assessment is Testweb proposed by Dippel, Neundorf, and Yakimchuk (2008) which includes dynamic tests that change according to the answers provided by the participants. The Testweb provides rating of tests and statistical summaries. Shared among the electronic assessment systems are automatic test corrections, automatic grading and summary reports (Llamas-Nistal et al., 2013). Although the aforementioned studies are important and timely, they are summative in nature (Gikandi

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et al., 2011) since online summative assessment is conducted through less integrated and asynchronous use of computers such as wikis, blog writing, asynchronous emails which use objective tests or cloze, true/false tests and give a digital report of correct answers to teachers and students (Siozos, Palaigeorgiou, Triantafyllakos, & Despotakis, 2009). The third generation started with more synchronous use of computers such as telecollaborations and forums for assessment. These are mediums in which assessment includes on-demand testing, e-portfolios, student modelling, formative assessment supporting learner autonomy, and diagnostic assessment (Pachler, Daly, Mor, & Mellar, 2010) which are all formative in nature.

Despite important and timely research on online summative assessment, scant attention was given to more integrated, communicative and interactive platform. Platforms by which the examinees' true knowledge and skills can be assessed in an authentic way (Huff & Sireci, 2001). Moreover, Kingston and Nash (2011)'s meta-analysis of 300 articles on formative assessment indicated that the studies on formative assessment are flawed since the reported effect sizes make the interpretability of the results difficult. Besides, comparative studies of online formative and summative assessment deal with test behaviors such as anxiety level of the test and confidence (Cassady & Gridley, 2005), and student engagement (Han & Finkelstein, 2013). Few studies have addressed comparative potential of the two in student achievement (Broadbent, Panadero, & Boud, 2017), and no comparative study of aforementioned assessment on literacy skill such as writing is done (to the best of the researcher's knowledge). Missing from the aforementioned studies is investigating whether interactive online platforms improve students' learning quality is a promising area for research. Although online learning is now becoming a trend in developed counties, it is still in its infancy in less developed or developing countries. This requires researchers investigate the potential of online education ecologies and how learning is affected by the lack of required infrastructures such as internet speed and quality which is a common problem in these countries including Iran.

This study is an attempt to fill such a void as it aims at investigating the comparative effect of online and summative assessment on writing ability of Iranian EFL learners.

2. Background

In this section, theoretical background and empirical studies on teaching and assessment of EFL writing and assessment and electronic assessment of writing are reviewed critically. This critical review helped the researcher design the study in the most logical and appropriate way.

2.1. Teaching and assessment of EFL writing

Writing has long been an interesting area of research for teaching practitioners and researchers. There are several reasons why writing received special attention; a) writing is the least attended skill till school age so it is the late needed and most demanding skill (Naghdipour, 2016), b)writing is not taught as a separate skill and it is treated as a medium to practice structure and vocabulary of a language, and c) it is seen more as one of the skills examined in internal and public exams in many educational systems (Lee, 2010). Writing in most EFL contexts is taught through traditional practice-examination oriented approach which requires teachers to assign a topic, learners to write about a topic within a specified time limit and teachers to provide feedback on grammar and vocabulary on the product submitted for teacher comments (Shojaei & Motamedi, 2014). In traditional writing classes, writing was rendered to one audience- assessing teacher- and it was assessed with respect to formal features of a text (Lee & Coniam, 2013; Vojak, Kline, Cope, McCarthey, & Kalantzis, 2011).

With the introduction of constructivist approaches towards learning, reform movements changed the trend of both education and

research from achievement-based analysis towards process − based learning through meditational tools such as collaboration, interaction, and scaffolding (Miyazoe & Anderson, 2010). Scholars tend to investigate potential of collaborative writing in construction and development of knowledge (Lei, 2008). Collaborative writing is defined as social negotiation between several writers in which knowledge is constructed and conveyed (Challob, Bakar, & Latif, 2016). Collaborative writing is a medium for scaffolding which involves students in problem solving and finding the best way to communicate what they mean (Lin & Maarof, 2013). In collaborative writing, learners engage in collective activity and they have equity and mutuality in labor and follow certain regulations to establish group harmony to achieve the outcome (Cho, 2017).

To go in line with the reforms in learning theories, assessment was also undergone a shift from assessment of learning to assessment for learning (Lee & Coniam, 2013) which requires teaching practitioners move from assessment for certifying and accountability purposes to a platform through which learners get engaged with self and peer assessment and establish critical awareness through formative feedback and close the gap between their current performance and the desired performance (zone of proximal development) (Vygotsky, 1980). New technologies provide great potential for connecting writing to situated learning practices in and out of classroom which support collaborative writing and writing portfolios that can be assessed by peers, teachers and teaching practitioners.

With the introduction of technology and computers into education and urgent need to design web-based educational application, research investigated how online writing opportunities such as asynchronous email writing, wiki writing, and blog writing affected writing experiences both from education and assessment perspectives (Cope, Kalantzis, McCarthey, Vojak, & Kline, 2011). However, what is common among writing in EFL context specially in middle east is that although synchronous online writing is acknowledged theoretically in terms of authenticity and on demand processing it brings, it is left behind in practice (Shojaei & Fatemi, 2016) due to lack of required infrastructure facilities such as internet quality and speed (Rabiee, Nazarian, & Gharibshaeyan, 2013). Research on assessment with respect to synchronious writing is even scarcer in these contexts. This study is an attempt to fill such a void in EFL context of Iran and the results can be insightful for EFL contexts similar to Iran.

2.2. Assessment and electronic assessment of writing

Early studies of writing assessment mainly focused on how to design tools and tasks with high reliability for evaluation purposes (Nixon & McClay, 2007). Broad (2003)'s review of many studies criticized them for being obsessed with finding ways of standardization to reduce the effect of bias in evaluation decisions. Different attempts were made at investigating assessment rubrics and their reliability (McMillan, Venable, & Varier, 2013). Critical assessment of rubrics was the initial step in reforming assessment. Rezaei and Lovorn (2010) questioned the reliability and validity of the rubrics used for assessment purposes by indicating that raters with rubrics and without rubrics were concerned with the mechanics of writing rather than the content. The needs analysis of academic and science communication courses by Rakedzon and Baram-Tsabari (2017) helped the researchers design a rubric which was used for genre sensitive evaluation. In contrast with what traditional approach towards focused rubrics in assessment highlighted, reform movements on assessment emphasized writing process, audience awareness, and topic knowledge. In addition, procedural facilitators such as rubrics, checklists and dictionaries and inclusion of assessment criteria such as organization, and content as well as genre specific evaluative components in rubrics besides structure and semantics are reported to be implemented in large scale educational assessment (Mo & Troia, 2017).

Although these studies are contributive to the field, they are