بسم الله الرحمن الرحيم

Using Electronic Portfolios to Develop EFL Student Teachers' Writing Performance and Reflective Thinking and Reduce their Writing Apprehension

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Abstract

This study aimed to investigate the effect of electronic portfolios on EFL student teachers' writing performance, reflective thinking and writing apprehension. Participants of the study, 30 EFL student teachers purposefully selected from the Faculty of Education in Suez, were exposed to four instruments in order to fulfill the objectives of the study. Those instruments were: two writing performance tests, a reflective thinking test, and a writing apprehension scale. Significant effects were found for electronic portfolios on writing performance and reflective thinking but not on writing apprehension. Based on these results, it was recommended that:

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(1) Electronic portfolios should be used at the university level in teaching and assessing writing performance. (2) Teachers should encourage students to take part in the evaluation of their writing performance.

I. Introduction

Writing is a difficult and demanding activity, and most people express some nervousness at being asked to write (Smith, 1984). Although some people can conquer their nervousness, others may become so apprehensive about writing situations that they avoid them, failing to get the practice they need to improve (ibid). As a result of the apparent importance of writing, the understanding of the impact of the fear or anxiety related to writing is a necessity (Boening, Anderson & Miller, 1997). In this respect, Psychometric research on anxiety has identified writing apprehension as a reliably measurable trait significantly implicated in how well people write and in how they feel about writing (Scardamalia & Bereiter, 1986). Although a certain degree of writing apprehension is natural, even useful for self-motivation, highly apprehensive writers suffer from a pronounced debilitating anxiety about writing and writing tasks which contributes to negative experiences with writing and fosters greater anxiety (Boening *et al*., 1997).

Also, primary to good writing is good thinking. As Olson (1984) explains, writing is one of the most challenging of thinking experiences. The relationship between thinking and writing is quite clear; they are recursive processes, one has to go back to go forward (Anwar, 2002). Rose and Nicholl (1997) affirm that producing knowledge requires the use of a number of thinking skills including reflective thinking. According to El-Hadidy (2007), reflective thinking is very essential in higher education as it assists students to really interact with the texts and materials they are studying and this helps to better interact with the world around them and to become more self-aware. Vucko (2003) believes that researchers have uncovered a positive correlation between students' abilities to reflect on their learning and academic achievement. So, the roots of such thinking need to be planted in preservice teachers at faculties of education in Egypt.

II. Problem of the Study

Despite the importance of writing performance, reflective thinking and a low level of writing apprehension for EFL student teachers, the researchers believe that EFL students at Suez Faculty of Education have some difficulties in those aspects. This belief was based on a number of assumptions which by their turn are seconded by the following:

A. The researchers' experience as TEFL specialists

B. The results of many studies that investigated the writing performance, reflective thinking, or writing apprehension of Egyptian students at faculties of education, (e. g., Abdel Hack, 2004; Abdel Latif, 2007; Abdel Sami, 1998, 2000; Anwar, 2000; Darwish, 2005; El-Dib, 2007; El-Marsafy, 2004; Gaber, 2003;

Hassan, 1999)

C. **The results of a pilot study conducted on a sample of senior EFL student teachers at Suez Faculty of Education measuring their writing performance, reflective thinking, and writing apprehension.**

Those difficulties were thought to be due to the ineffectiveness of the teaching and assessment techniques or methods used. Consequently, the researchers looked for a solution for this problem. They surveyed recent instructional and assessment techniques hoping that they would find one that might help improve the writing performance and reflective thinking of those students as well as to reduce their level of writing apprehension. Many methods were surveyed by the researchers. However, the one that caught their attention most was the electronic portfolio. Therefore, this study is an attempt to find out the effectiveness of electronic portfolios in developing EFL student teachers' writing performance and reflective thinking as well as reducing their writing apprehension.

III. Statement of the Problem

The problem of this study was stated as thus: There were some weaknesses in EFL student teachers' writing performance, reflective thinking, and a high level of writing apprehension. In order to find a solution for this study problem, the researchers posed the following main question: *How can EFL student teachers' writing performance and reflective thinking be developed and their writing apprehension be reduced?* Upon that question, the following sub-questions could be formulated:

A. How can EFL student teachers' writing performance be developed?
B. How can EFL student teachers' reflective thinking be developed?
C. How can EFL student teachers' writing apprehension be reduced?

The researchers surveyed recent teaching and assessment techniques and found that the electronic portfolio is an innovative one which might have the potential to solve the problem of the present study. Therefore, the following questions were formulated:

A. What is the effectiveness of electronic portfolios in developing EFL student teachers' writing performance?
B. What is the effectiveness of electronic portfolios in developing EFL student teachers' reflective thinking?
C. What is the effectiveness of electronic portfolios in reducing EFL student teachers' writing apprehension?

IV. Limitations of the study

The present study was limited to the following:

A. **Thirty EFL student teachers enrolled at the fourth year at Suez Faculty of Education, Suez Canal University.**

B. **Three months during the second term of the academic year 2008-2009.**

V. Terms of the Study

A. Electronic portfolio

The electronic portfolio was operationally defined as "a website that contains a purposeful and organized selection of a student's digital essays (both raw and revised) in addition to reflection on each of the essays as well as on the collection as a whole in such a way that demonstrates student's development as a writer. This website can be easily navigated through hyperlinks and can reside on a CD and/or on the Internet."

B. Writing performance

Writing performance was seen by the researchers as "the production of argumentative English essays with acceptable ideas (adequate, relevant, clear, organized, and coherent); argumentative discourse (position, support, logic, personality, and counter-arguments); and correctness (grammar, spelling, word choice, punctuation, and paragraphing)."

C. Reflective Thinking

In the current study, reflective thinking was suggested as "the process of making informed and logical decisions about one's own practice, then assessing the consequences of those decisions. This can be manifested in students' ability to: articulate their own views in a fair-minded way, make creative judgments, express situations from multiple perspectives, introduce alternative explanations, and use evidence in evaluating a decision."

D. Writing Apprehension

To the researchers, writing apprehension was operationally defined as "the tendency to experience high degrees of anxiety when asked to write as measured by the researchers' devised scale."

VI. Significance of the study

This study might:

A. provide EFL teachers with valid and reliable writing performance and reflective thinking tests, and a writing apprehension scale.
B. show the feasibility of using technology in language teaching, learning, and assessment.
C. provide EFL teachers with an applicable strategy for the continuous assessment of writing.
D. combine two approaches to teaching and assessing composition: portfolio-based and computer-assisted approaches.
E. help EFL teachers become aware of writing apprehension consequences and address them in their classrooms so as to enable their students to avoid their potential detrimental effects.

VII. Review of Related Literature

Due to "global influences, such as changes in the world economy, the information revolution, environmentalism, and cross-national health threats" (Puhl, 1997, p. 2), the field of assessment has witnessed a major shift from strictly summative testing tools and procedures to a more humanistic approach using assessment techniques that stress formative assessment (O'Neil, cited in Shaaban, 2001).

Alternative assessment uses a wide variety of formats such as oral interviews, individual or group projects, dialogue journals, story retelling, oral reading, group discussions, role playing, teacher-student conferences, retrospective and introspective verbal reports (El-Koumy, 2003). One of the most popular forms of alternative assessment now is the construction of portfolios (Barrett, 2000a; Brown, 2001). Gibson and Barrett (2003) point out that in the past, portfolios were assembled from collections of work stored in boxes or three-ring binders and now are stored in digital form. Educators used portfolios long before the digital age, which suggests that perhaps the new medium of electronic portfolios, in part, can be looked at through lenses from the past (Gibson & Barrett, 2003).

Electronic portfolios are also referred to as eportfolios (Batson, 2007), e-portfolios (Allan, Zylinski, Temple, Hislop, & Gray, 2003; Klein & Chandler, 2003; Savin-Baden, 2008), digital portfolios (Barrett, 2005a; Lever-Duffy et al., 2003), online portfolios (Wielenga, 2000), web-based portfolios (Chang & Tseng, 2009), webfolios (Love, McKean, & Gathercoal, 2004), internet-based portfolios (Hung, 2006), computer-based portfolios (Lankes, 1995), technology-based portfolios (Tancock & Ford, 1996), multimedia portfolios (Spurgeon & Bowen, 2002), paperless portfolios (McShane, 2005), digital ego (Kokswijk, 2007),

electronic identity (Ittleson, 2001), virtual identity (Treuer & Jenson, 2003) or e-dentity (Skiba, 2005).

For Siemens (2004), definitions of electronic portfolios vary, but generally include the notion of a digital resource (personal artifacts, instructor comments) demonstrating growth, allowing for flexible expression, and permitting access to varied interested parties (parents, potential employers, fellow learners, and instructors). Buzzetto-More and Alade (2008) define the electronic portfolio as a student-centered outcomes-based assessment regime involving learners in the gathering, selection, and organization of artifacts synthesized into a compilation purposed to demonstrate knowledge, skills, and/or achievements supported by reflections that articulate the relevance, credibility, and meaning of the artifacts being presented. Guo and Greer (2006) define it as an organized collection of digital and/or analog artifacts and reflective statements that demonstrate a learner's intellectual development over time. Challis (2005) provides a more in depth definition of the electronic portfolio defining it as:

A. Selective and structured collections of information
B. Gathered for specific purposes and showing/evidencing one's accomplishments and growth
C. Stored digitally and managed by appropriate software
D. Developed by using appropriate multimedia and customarily within a web environment
E. Retrieved from a website, or delivered by CD-ROM or by DVD

Electronic portfolios depend on four general and overlapping theoretical bases: learner-centered instruction—providing opportunities for students to become active learners as they set goals for learning, engage in self-reflections, review goals, and assume responsibility for their own learning (Barrett, cited in Sweat-Guy & Buzzetto-More, 2007), the sociocognitive theory—helping the learner get feedback from his/her classmates as well as give feedback to them (Brown, 2001), constructivism—giving students the ability to construct meaning using the learning style that suits them best (Roeder, 2007), and the multiple intelligences theory—allowing students to include documents and photos, along with audio and videotapes.

Academic leaders are excited by electronic portfolios (Jafari, 2004). They view this growing phenomenon as a powerful tool for learning and assessment (Skiba, 2005). Therefore, it is gaining recognition as a valuable tool for learners, instructors, and academic organizations (Siemens, 2004) holding the promise of being an important component of future educational models (Guo & Greer, 2006) or at least a starting point for the type of learning communities that educational organizations will need to offer future students (Greenberg, 2004). That is why Batson (2002) and Meyer and Latham (2008) agree that electronic portfolios have the potential to change the face of higher education. Love, McKean and Gathercoal (2004) go even further to consider electronic portfolios to have "the

most significant effect on education since the introduction of formal schooling" (p. 24). Ring and Foti (2003) maintain that the development of an electronic portfolio promotes the engagement of students in authentic tasks in authentic contexts. Moreover, Guo and Greer (2006) point out that electronic portfolios can offer advantages in demonstration of skills, learner reflection, collaboration, and assessment and that the portfolio offers the possibility to show how the learner conquers the subject domain during the work or learning process. For Tuksinvarajarn and Todd (2009), they are very useful to teachers because they "offer a variety of ways to motivate all types of students" (p. 23).

Many researchers (e.g., Demirli & Gürol, 2007; Hung, 2006; Knight, Hakel & Gromko, M. 2006) agree that electronic portfolios offer all of the advantages of traditional portfolios and have more advantages related to the added element of using technology. Among those advantages are: the elimination of physical storage problems (Buzzetto-More, 2006; Gathercoal, Bryde, Mahler, Love & McKean, 2002; Meyer & Latham, 2008), accessibility to a variety of reviewers (ePortConsortium, 2003; Taggart & Wilson, 2005), duplicability (Heath, 2005), use of multimedia (Barrett, 2006b; Knight *et al.*, 2006; Love & Cooper, 2004; Milman & Kilbane, 2005), enhancement of students' and teachers' technological skills (Barrett, 2003a; Ledoux & McHenry, 2006; Wall, Higgins, Miller & Packard, 2006), support of lifelong learning (Fournier, Lane, & Corbett, 2007; Rathburn, 2007), low cost (Lynch & Purnawarman, 2004), ease (Landone, Vrasidas, Christodoulou, & Retalis, 2004; Wielenga, 2000), and organization (Ahn, 2004; Canada, 2002; Wade, Abrami & Sclater, 2005; Young, 2002).

The flexibility of the electronic portfolio makes it useful for students, teachers, administrators and human resource personnel (Bhattacharya & Mimirinis, 2007) with the potential to meet such diverse purposes (Gibson & Barrett, 2003) as assessment, accreditation, reflection, and professional development (Fiedler and Pick, 2004). A number of the proponents of electronic portfolios mention some of the purposes that electronic portfolios can serve. The first of those purposes is using electronic portfolios for assessment and evaluation (Attwell, 2005; Tolsby, 2001), presenting learning (Dorn, Madeja & Sabol, 2003; Niguidula, 2002; Ramey & Hay, 2003), enhancing interaction, communication and collaboration with others in the community (Fiedler & Pick, 2004), reflecting on learning (Attwell, 2005; Barrett, 2005a); supporting ongoing learning and professional development (Barrett, 2004b; Fiedler & Pick, 2004; Ramey & Hay, 2003); supporting college admissions (Dorn, Madeja & Sabol, 2003) and employment (Barrett, 2004b); and making archives for future generations of learners to build on (Bull et al., cited in Gathercoal, Love, Bryde & McKean, 2002).

Five main stages are agreed upon by educational researchers as the main stages of developing electronic portfolios. These stages are

A. **Collection**—where students learn to save artifacts that represent the successes in their day-to-day learning (Barrett, 2000c) integrating text and multimedia elements such as pictures, graphics, and audio and video recordings (Abrami & Barrett, 2005; Canada, 2002; Heath, 2005; Love & Cooper, 2004; Wade *et al.*, 2005),

B. **Selection**—where students review and evaluate the artifacts they have saved, and identify those that demonstrate achievement of specific standards (Barrett, 2000c),

C. **Reflection**—where students reflect on their work and their reasons for choosing certain pieces to be incorporated in their electronic portfolios (Butler, 2006),

D. **Organization**—where students take advantage of the linking capabilities of digital technology to make easy connections between various work products (Gibson & Barrett, 2003), and

E. **Presentation**—where the electronic portfolio is presented in the form of a website of hypertextual links to artifacts and reflections related to the range of different types of learning (Richards, 2002).

Just like traditional portfolios, assessment in electronic portfolios includes self-, peer and teacher assessment (Greenberg, 2004) throughout the portfolio implementation process as well as assessment of the whole portfolio after it is finished (Meyer & Latham, 2008). However, assessment in electronic portfolios includes a new dimension which is not existing in traditional portfolios; i.e., feedback from outside reviewers. Therefore, Vanides (2002) believes that online collaboration tools create new opportunities for in-depth, real-time feedback and discussion between peers, with mentors or others.

Many educationalists indicate that electronic portfolios can help in improving writing performance and reflective thinking as well as in reducing writing apprehension. As for writing performance, it is obvious that electronic portfolios combine two important approaches to writing instruction and assessment: portfolio-based and computer-assisted. Therefore, in addition to possessing the potential of enhancing writing performance existing in traditional portfolios (Abdel Hamid, 2006; Etheridge, 2006; Kathpalia & Heah, 2008), electronic portfolios have an extra privilege which is the use of computers in enhancing writing performance. In this concern, Pullman (cited in Hung, 2006) argues that since an electronic portfolio expands writing to include creative work in sound, images, and hypertexts, it presents the possibility of a new literacy which he refers to as e-literacy. He mentions three benefits of electronic portfolios for writing. First, students will perceive their writing as an important process and take greater pride in it because electronic portfolios enable them to distribute their work relatively easily. Second, they make students aware that hypertext is a way of thinking, not just a technical linking procedure. Third, writing in the electronic portfolios can be viewed not only as computer-mediated textual literacy but also as a new form of art.

Although, there is a considerable number of empirical studies investigating the effect of traditional portfolios on writing performance (Abdel Hamid, 2006; Agnew, 1995; Anderson, Fuhr & Olson, 1996; Anwar, 1995; Baker, 1993; Easterwood, 1996; Jones, 1994; Miller & Richarde, 1991; Moening & Bhavnagri, 1996; Shober, 1996; Spencer, 1999; Starck, 1999; Subrick, 2003; Sultana & Kay, 2000; Wulfhorst, 1995), reflective thinking (Brown, McCrink & Maybee, 2003; Doty, 2001; Huebner, 1997; Mansvelder-Longayroux, Beijaard, & Verloop, 2007; Nickerson, 1996; Richert, 1990; Schwartz, 2005; Tuescher, 1997; Vucko, 2003; Wagner, 1992; Watson-Barnett, 1997), and writing apprehension (Anwar, 1995; Ketter, 1993; Öztürk & Çeçen, 2007; Rivers-Fritch, 1998; Sims, 1995; Westgard, 1996; Wulfhorst, 1995), a limited number of studies investigated the effect of electronic portfolios on those constructs. Concerning writing performance, the researchers could find only one study investigating the effect of electronic portfolios on writing performance. This study was carried out by Desmet, Miller, Griffin, Balthazor, and Cummings (2008) who investigated whether revision of graded essays for an electronic portfolio improve first-year Composition students' scores from anonymous raters. In a sample of 450 paired essays, 46 percent improved by one or more points on a six-point scale, 28 percent remained the same, and 26 percent declined by one or more points.

Concerning reflective thinking, the relationship between electronic portfolios and reflective thinking is a mutual one. On one side, reflective thinking is an essential component of electronic portfolios (Barrett, 2006b). On the other side, there is a good body of research indicating that electronic portfolios develop reflective thinking (Light & Sproule, 2007), stimulate students to engage in reflective thinking (Cohn & Hibbitts, 2004), and provide an asynchronous environment which affords students the time for thoughtful analysis, reflection, and composition as their discussion of an issue evolves (Duffy, Dueber & Hawley, 1998). As for the empirical research, the researchers found five previous studies (Avraamidou & Zembal-Saul, 2002; Chang & Tseng, 2009; Land & Zembal-Saul, 2003; Spurgeon & Bowen, 2002; Tancock & Ford, 1996) that found a positive effect for electronic portfolios on reflective thinking.

As for writing apprehension, electronic portfolios possess some characteristics that would help to reduce writing apprehension. They evaluate students on the basis of their best work which might relieve them from the fear of being criticized on their bad writing (Miller & Richarde, 1991). Moreover, because scores are not recorded for each piece of writing in portfolio-based instruction, the fear of evaluation is removed. Thus, the use of portfolios may be more likely to motivate students to continue writing than does the use of the typical process-centered approach with its more conventional scheme of evaluation (Johnston, cited in Baker, 1993). Additionally, some students need to be graded on a long-term basis. Therefore, keeping portfolios of work and grading students on the progress made on a paper over an extended period of

time can be very encouraging because it gives students a sense of accomplishment and a chance to make themselves better writers with each paper and revision (Schauweker, 1995). Anwar (1995) adds that perhaps because they allow for delayed evaluation and foster a supportive relationship between teacher and student, portfolios have been praised as motivational tools that can affect students' attitudes towards their writing.

As for the empirical research, the researchers found no studies that investigated the effect of electronic portfolios on writing apprehension.

VIII. Hypotheses
   **The hypotheses of the study were:**
A.   **There would be no statistically significant difference in the control group mean scores between the pretest and the posttest of writing performance.**
B.   **There would be no statistically significant difference in the experimental group mean scores between the pretest and the posttest of writing performance.**
C.   **There would be no statistically significant difference in the control group mean scores between the pretest and the posttest of reflective thinking.**
D.   **There would be no statistically significant difference in the experimental group mean scores between the pretest and the posttest of reflective thinking.**
E.   **There would be no statistically significant difference in the control group mean scores between the pretest and the posttest of writing apprehension.**
F.   **There would be no statistically significant difference in the experimental group mean scores between the pretest and the posttest of writing apprehension.**
G.   **There would be no statistically significant difference between the mean gain score of the control group and that of the experimental group on writing performance.**
H.   **There would be no statistically significant difference between the mean gain score of the control group and that of the experimental group on reflective thinking.**
I.   **There would be no statistically significant difference between the mean gain score of the control group and that of the experimental group on writing apprehension.**

IX. Method
A. Design

   The design used in the present study was quasi-experimental—a compromise design (Kerlinger, cited in Cohen, Manion & Morrison, 2003) which approaches a true experimental design but lacks much of its control (Black, 1999) i.e., the researchers

had to take existing groups rather than draw on random samples (Gray, 2004). Among the various quasi-experimental designs, the researchers selected the *Nonequivalent Control group Design*—one of the mostly used quasi-experimental designs in educational research (Cohen *et al.,* 2003). Employing this design, the researchers tested all the participants of the study on writing performance, reflective thinking, and writing apprehension before the experiment and then divided them into two equivalent groups: a control group and an experimental group based on their scores on the pretests. During the experiment, only the experimental group received the treatment. Upon the completion of the experiment, the two groups were posttested. Gain scores for each group were evaluated separately then differences in gain scores between the two groups were evaluated. This design can be diagrammed in Figure 1 below.
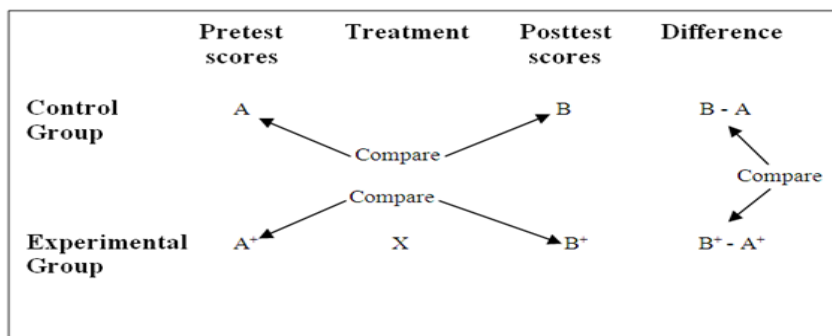
con .... ction between treatment
.... .test vs. posttest).

B. Participants

The sample of the present study was a purposeful sample, a non-random sampling technique which allows for the selection of a limited number of information-rich cases (Patton, 1990). The nature of the present study directed the researchers' choice to limit her study to a purposeful sample of a limited number of participants from Suez Faculty of Education. This was due to the following reasons:

1. **A small number of participants would enable the researchers to better control their experiment because the experiment required that the researchers train students in some computer skills, give them individual feedback on their essays on a weekly basis, coach them while building and revising their electronic portfolios, and offering them the help they needed.**
2. **The Faculty of Education in Suez has a number of modern computer labs with Internet connections. This made it an appropriate place for conducting the experiment.**
3. **Fourth-year EFL students at the Faculty of Education in Suez study Intel® Teach Program[*] in which they learn how to make documents, presentations, brochures as well as build websites. So, those students will be well prepared to use electronic portfolios.**

For all those reasons, 30 fourth-year EFL student teachers at the Faculty of Education in Suez during the 2008/2009 academic year were purposefully selected to participate in the study and were divided into two groups (15 students in the control group and 15 students in the experimental group). All participants spent at least 12 years learning English as a foreign language. They have received English writing instruction at the University in the lecture mode. In each academic year, they take an English essay writing course. They also studied computer for four years at the faculty. They all ranged between 20-23 years of age.

C. Instruments
1. Two writing performance tests

These tests were used as pretest and posttest in order to measure students' writing performance before and after the experiment. Each of the tests consisted of a composition-writing question which required students to write an essay containing not less than 10 ideas on an assigned topic. The topics were of the argumentative mode as it would be the mode students would practice during the semester. See Appendix A for the writing performance pretest and Appendix B for the writing performance posttest. The test was reviewed by seven TEFL specialists to ensure face validity. Test retest reliability coefficient was 0.960 for the pretest and 0.924 for the posttest. These coefficients are significant at the 0.01 level.

2. A reflective thinking test

This test measured students' reflective thinking before and after the experiment. Literature related to reflective thinking was reviewed (e. g., Anwar, 2002; Atkins & Murphy, cited in Brown & Gillis, 1999; Mazow, 1999; Shermis, 1999; Weast, 1996). Based on this literature review, a list of 20 reflective thinking skills were collected and put in a scale of importance (very-moderate-weak). Such a list was shown to a jury in the field of TEFL to determine which ones are important for EFL student teachers. The most important five skills were finally chosen for the test. These skills are listed below:
  a) articulating one's own views in a fair-minded way
  b) making creative judgments
  c) expressing situations from multiple perspectives
  d) introducing alternative explanations
  e) using evidence in evaluating a decision

The final test was called the **Reflective Thinking Test (RTT) (See appendix C)**. In this test, students were required to write a reflective essay on their decision of studying at the Faculty of Education in Suez. Students were required to reflect on why they made that decision as well as how they judge or evaluate that decision now. Criterion-related validity was calculated by correlating scores on the RTT to their scores on Kember et al.'s (2000) Reflective Thinking Questionnaire (RTQ). The correlation coefficient was 0.836 (significant at the 0.01 level).

3.   A writing apprehension scale

Literature related to the characteristics of apprehensive writers was reviewed. This review resulted in the generation of 15 scale items, all of which are consistent with the adopted definition of writing apprehension. The wording of the scale items was modeled after the statements on related writing apprehension measures, including Daly and Miller's (1975) WAT, Riffe and Stacks' Mass Communication Writing Apprehension Measure, and Cheng's (2004) Second Language Writing Apprehension Inventory. A Likert-type response format was adopted consisting of a 5-choice response scale corresponding to 1 (strongly disagree), 2 (tend to disagree), 3 (uncertain), 4 (tend to agree), and 5 (strongly agree). Scores on the scale may range from 15 (the minimal score) to 75 (the maximal score).

D. Scoring
1. Scoring Writing Performance

The researchers developed a rubric in order to score the answers of the participants of the study to the writing performance pretest and posttest. In this rubric, a total of 15 points was equally divided among three components: ideas (adequacy, relevance, clarity, organization, and coherence); argumentative discourse (position, support, logic, personality, and counter arguments); and correctness (grammar, spelling, word choice, punctuation, and paragraphing). Each component has three levels: strong (5 scores), average (3 scores), and weak (1 score). Seven specialists in the field of TEFL were asked to judge the distribution of the 15 points among the components of the writing performance scoring rubric. Reviewers' suggestions were taken into consideration. See Appendix E for the final version of the rubric. To measure the reliability of the writing performance scoring rubric, this rubric was compared to the impressionistic marking method. The three raters marked students' answers according to a single grade based on the impression of the test. After two weeks, the same raters were asked to mark copies of the same scripts using the rubric

devised by the researchers. One-way analysis of variance comparing the mean scores of the three raters' estimations using the impressionistic method revealed significant differences among the three raters (f=31.370, p<0.05). This result shows that there are significant differences among the marks of the three raters when they followed the impressionistic method.

2. Scoring Reflective Thinking

The researchers developed a rubric in order to score the answers of the participants of the study to the reflective thinking test. In this rubric, a total of 5 points was divided among the five skills chosen for the reflective thinking test. Each of the three raters was requested to read each of the reflective essays and give it a score out of five, one score for each reflective thinking skill. Seven specialists in the field of TEFL were asked to evaluate the reflective thinking evaluation rubric. Reviewers' suggestions were taken into consideration. See Appendix F for the final version of the rubric. To measure the reliability of the reflective thinking scoring rubric, this rubric was also compared to the impressionistic marking method. One-way analysis of variance comparing the mean scores of the three raters' estimations using the impressionistic method revealed significant differences among the three raters (f=47.497, p<0.05).

3. Scoring Writing Apprehension

As for the scoring of writing apprehension, there was no need for multiple raters because the writing apprehension scale followed the Likert-type response format. Therefore, it did not need multiple raters.

E. Procedures

The experimental procedures of the present study were executed in the Faculty of Education in Suez, Suez Canal University during the 2008/2009 academic year. Those procedures were carried out in four successive stages: 1) setting the scene, 2) pretesting, 3) implementing electronic portfolios, and posttesting. Each of those stages is described below.

1. Setting the Scene

A manual for creating electronic portfolios was prepared (See appendix J). This manual describes, in detail and with pictures, how to build a web site and how to use this website as an electronic portfolio. Training sessions in how to use this manual to build electronic portfolios took place throughout the first term of

the academic year 2008-2009. Upon the completion of the training course, 30 students were selected from those who acquired the technological skills necessary for participating in the experiment, i.e., those who learned how to create electronic portfolios. The selected participants were divided into two groups: a control group (consisting of 15 students) and an experimental group (consisting of 15 students).

2. Pretesting

As soon as the second semester of the same year began, the pretests were administered to all the participants of the study. To insure the equivalence of the two groups in the dependent variables, Mann-Whitney U test was used to test the differences between the experimental and control groups on the pretests of writing performance, reflective thinking and writing apprehension. See Table 1 for the difference between the two groups on the writing performance pretest, Table 2 for the difference between the two groups on the reflective thinking pretest and Table 3 for the difference between the two groups on the writing apprehension pretest.

Table 1. Mann Whitney U Test for the Difference between the Control and Experimental Groups on the Writing Performance Pretest

Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Significance
Control	15	16.567	248.500	96.500	0.505
Experimental	15	14.433	216.500		
Total	30				

Table 2. Mann Whitney U Test for the Difference between the Control and Experimental Groups on the Reflective Thinking Pretest

Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Significance
Control	15	16.533	248.000	97.000	0.516
Experimental	15	14.467	217.000		
Total	30				

Table 3. Mann Whitney U Test for the Difference between the Control and Experimental Groups on the Writing Apprehension Pretest

Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Significance
Control	15	15.167	227.500	107.500	0.835
Experimental	15	15.833	237.500		
Total	30				

Tables 1, 2, and 3 show that the control and experimental groups were fairly equivalent on writing performance (U=96.500, p>0.05), reflective thinking (U=97.000, p>0.05), and writing apprehension (U=107.500, p>0.05) before the treatment.

After making sure that the two groups were equivalent in the dependent variables—writing performance, reflective thinking, and writing apprehension—the experiment was commenced. The implementation of electronic portfolios went through five successive phases—based on the literature on electronic portfolios. These phases were collection, selection, reflection, organization and presentation.

3. Implementing Electronic Portfolios
a) Collection

As its name suggests, this was the phase where students of the experimental group collected the digital artifacts from which they would later select specific items to be included in their electronic portfolios. During each week of the 12-week semester, all the students attended a two-hour session with Mrs. Samah Zakareya where they voted on a topic from a list of argumentative topics (see appendix I for a list of the topics covered during the experiment) and held a discussion on that topic. After each session, all the students wrote essays on Microsoft Word® and sent them to her by e-mail. She read the essays and sent feedback to students. Students were told to edit their essays based on her feedback. Only students of the experimental group were required to keep their essays (raw and revised) to include them in their electronic portfolios.

b) <u>Selection</u>

After the weekly assignments were completed, students had to select the entries they would include into their electronic portfolios. Each student was required to include five of the essays he/she wrote during the collection phase. These five essays should include the best essay as well as the worst essay from the student's point of view in addition to three more essays of the student's own selection. For each essay, the student should include the first draft as well as the revised draft.

c) <u>Reflection</u>

Two types of reflection were required within the electronic portfolio:
1) Artifact reflection

Artifact reflection is related to the essays included in the electronic portfolio. The student was required to attach with each essay his/her reflection on that essay. To help students in writing their reflections, the researchers prepared a reflection template. In this template, each student was recommended to complete some statements for each essay he/she decided to include into his/her electronic portfolio. The statements were phrased in such a manner that they compelled students to take an 'I' approach to their writing, to make them aware of their feelings and attitude towards their writing, to size up their strengths and weaknesses as writers, and to think about how they could apply these skills to future writing tasks in their course of study. See Appendix K for the reflection template.

2) Overall reflection

Students were instructed to provide information on the overall quality of their portfolio, what they found difficult about the experience, and what they liked about the process. They were also asked to detail areas where they felt they improved and areas where they felt they needed further work. Students were recommended to consider the following questions while preparing their overall reflection:

- What are your strengths and weaknesses in writing?
- How has your writing evolved?
- What is your plan of action for working toward improvement?
- What resources, mentors, etc. have impacted your development as a writer?
- What does your portfolio reveal about you?
- What are your plans for using what you have learned in the future?

d) Organization

In this phase, each student organized his/her artifacts into a website and made a table of contents with hyperlinks to those artifacts. Moreover, he/she prepared a cover letter which included his/her personal information in addition to the overall reflection he/she prepared in the previous phase. The cover letter also included access information for their audience. Entries were arranged in the website's pages, each with a hyperlink in the table of contents (see Appendix J3 for the *Hyperlinking Guide*). Each entry consisted of one of the selected five essays (both the raw draft and the revised version). Each student was also allowed to include some optional entries (discussed in the selection phase).

e) Presentation

In this step, each student reviewed his/her electronic portfolio using the *Review and Revision* Guide (see Appendix J4). Following this guide would help the student ensure that the final electronic portfolio adhered to the guidelines and that all the links work properly before he/she published it. After the electronic portfolios were reviewed, they were ready to be presented. *The Publishing Guide* (in Appendix J5) was designed to help students publish their electronic portfolios on the Internet or on CD-ROMs.

4. Posttesting

Upon the completion of the experiment, the two groups were posttested. The researchers evaluated gain scores for each group separately so that they could determine whether there was a reliable change in the dependent variables

for each of the two groups between the pretest and the posttest. For this purpose, they employed Wilcoxon Signed Ranks Test. Furthermore, in order to determine whether any change from pre- to posttest was greater for one of the groups than for the other, the researchers used Mann-Whitney U test between the two groups, employing a gain score for each of the participants in the study.

X. Statistical Analysis

Wilcoxon Signed Ranks test was used to test the difference in the scores of each group between the pretest and the posttest of writing performance, reflective thinking, and writing apprehension.
See Tables 3, 4, and 5 for the differences in the scores of the control group between the pretest and the posttest of writing performance, reflective thinking, and writing apprehension respectively as well as Tables 6, 7, and 8 for the differences in the scores of the experimental group between the pretest and the posttest of writing performance, reflective thinking, and writing apprehension respectively.

Table 4. Wilcoxon Signed Ranks Test for the Differences in the Scores of the Control Group between the Pretest and the Posttest of Writing Performance

		N	Mean Rank	Sum of Ranks	Significance
Pretest – Posttest	Negative Ranks	10	8.850	88.500	0.104
	Positive Ranks	5	6.300	31.500	
	Ties	0			
	Total	15			

As indicated in Table 4, Wilcoxon Signed Ranks test revealed that the differences between the mean ranks of the control group on the pretest and the posttest of writing performance were not significant (T=31.5, p>0.05).

Table 5. Wilcoxon Signed Ranks Test for the Differences in the Scores of the Experimental Group between the Pretest and the Posttest of Writing Performance

		N	Mean Rank	Sum of Ranks	Significance
Pretest – Posttest	Negative Ranks	13	7.808	101.500	0.002
	Positive Ranks	1	3.500	3.500	
	Ties	1			
	Total	15			

As indicated in Table 5, Wilcoxon Signed Ranks test revealed that the differences between the mean ranks of the experimental group on the pretest and the posttest of writing performance were statistically significant (T=3.50, p<0.05). Effect size for these differences was found to be 0.8 calculated using Cohen's (1988) formula which states: $d = M_1 - M_2 / \Box\,^{*}$.

Table 6. Wilcoxon Signed Ranks Test for the Differences in the Scores of the Control Group between the Pretest and the Posttest of Reflective thinking

		N	Mean Rank	Sum of Ranks	Significance
Pretest – Posttest	Negative Ranks	9	7.833	70.500	0.545

	Positive Ranks	6	8.250	49.500	
	Ties	0			
	Total	15			

As indicated in Table 6, Wilcoxon Signed Ranks test revealed that the differences between the mean ranks of the control group on the pretest and the posttest of reflective thinking were not significant (T=49.50, p>0.05).

Table 7. Wilcoxon Signed Ranks Test for the Differences in the Scores of the Experimental Group between the Pretest and the Posttest of Reflective thinking

		N	Mean Rank	Sum of Ranks	Sig
Pretest – Posttest	Negative Ranks	14	8.00	112.00	0.003
	Positive Ranks	1	8.00	8.00	
	Ties	0			
	Total	15			

As indicated in Table 7, Wilcoxon Signed Ranks test revealed that the differences between the mean ranks of the experimental group on the pretest and

the posttest of reflective thinking were statistically significant (T=8, p<0.05). Effect size for these differences was found to be 0.7 calculated using Cohen's (1988) formula.

Table 8. Wilcoxon Signed Ranks Test for the Differences in the Scores of the Control Group between the Pretest and the Posttest of Writing Apprehension

		N	Mean Rank	Sum of Ranks	Significance
Pretest – Posttest	Negative Ranks	8	10.310	82.50	0.198
	Positive Ranks	7	5.360	37.50	
	Ties	0			
	Total	15			

(*) d is the effect size, M_1 is the mean of scores of the experimental group on the writing posttest, M_2 is the mean of scores of the experimental group on the writing pretest, and ⬜⬜ is the standard deviation of either group.

As indicated in Table 8, Wilcoxon Signed Ranks test revealed that the differences between the mean ranks of the control group on the pretest and the posttest of writing apprehension were not significant (T=37.50, p>0.05).

Table 9. Wilcoxon Signed Ranks Test for the Differences in the Scores of the Experimental Group between the Pretest and the Posttest of Writing Apprehension

		N	Mean Rank	Sum of	Significance

				Ranks	
Pretest – Posttest	Negative Ranks	8	11.313	90.500	0.081
	Positive Ranks	7	4.214	29.500	
	Ties	0			
	Total	15			

As indicated in Table 9, Wilcoxon Signed Ranks test revealed that the differences between the mean ranks of the experimental group on the pretest and the posttest of writing apprehension were not statistically significant (T=29.5, p>0.05). Effect size for these differences was found to be 0.3 calculated using Cohen's (1988) formula.

In an attempt to determine whether any change in writing performance from pre- to posttest was greater for one of the groups than for the other, the researchers used Mann-Whitney U test between the two groups, employing a gain score in writing performance, reflective thinking, and writing apprehension for each of the participants in the study. See Table 10, 11, and 12 for Mann-Whitney U test of the differences between the control and experimental groups in the gain scores of writing performance, reflective thinking, and writing apprehension respectively.

Table 10. Mann-Whitney U Test of the Differences between the Gain Scores of the Control and Experimental Groups in Writing Performance

Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Significance
Control	15	10.6	306.00	39.00	0.002
Experimental	15	20.4	159.0		
Total	30				

Table 10 shows that statistically significant differences existed between the gain scores of the control group and the experimental group in writing performance (U=39.00, p<0.05). This means that the gain scores in writing performance for the experimental group were significantly higher than the gain scores in writing performance for the control group.

Table 11. Mann-Whitney U Test of the Differences between the Gain Scores of the Control and Experimental Groups in Reflective Thinking

Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Significance
Control	15	12.233	183.500	63.500	0.037
Experimental	15	18.7667	281.500		
Total	30				

Table 11 shows that statistically significant differences existed between the gain scores of the control group and the experimental group in reflective thinking (U=63.50, p<0.05). This means that the gain scores in reflective thinking for the experimental group were significantly higher than the gain scores in reflective thinking for the control group.

Table 12. Mann-Whitney U Test of the Differences between the Gain Scores of the Control and Experimental Groups in Writing Apprehension

Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Significance
Control	15	14.630	219.500	99.500	0.584
Experimental	15	16.370	245.500		
Total	30				

Table 12 shows that no statistically significant differences existed between the gain scores of the control group and the experimental group in writing apprehension (U=99.50, p>0.05). This means that the gain scores in writing

apprehension for the experimental group were not significantly lower than the gain scores in writing apprehension for the control group.

XI. Results of the Study

    Based on the statistical analyses performed on the data, the following results were found:
A. No statistically significant difference existed in the control group mean scores between the pretest and the posttest of writing performance.
B. Statistically significant difference existed in the experimental group mean scores between the pretest and the posttest of writing performance.
C. No statistically significant difference existed in the control group mean scores between the pretest and the posttest of reflective thinking.
D. Statistically significant difference existed in the experimental group mean scores between the pretest and the posttest of reflective thinking.
E. No statistically significant difference existed in the control group mean scores between the pretest and the posttest of writing apprehension.
F. No Statistically significant difference existed in the experimental group mean scores between the pretest and the posttest of writing apprehension.
G. A statistically significant difference existed between the mean gain score of the control group and that of the experimental group in writing performance.
H. A statistically significant difference existed between the mean gain score of the control group and that of the experimental group in reflective thinking.
I. No statistically significant difference existed between the mean gain score of the control group and that of the experimental group in writing apprehension.

XII. Discussion of the Results

    The first result was that no statistically significant difference existed in the control group mean scores between the pretest and the posttest of writing performance. Thus, one can say that the students of the control group did not achieve significant improvements in writing performance. A possible explanation for this result is that those students did not build electronic portfolios during the experiment so they were deprived of the beneficial effects of electronic portfolios on writing performance explained in the literature review.
    The second result was that a statistically significant difference existed in the experimental group mean scores between the pretest and the posttest of writing performance Thus, one can say that the students of the experimental group achieved significant improvements in writing performance during the period of the experiment. A possible explanation of this result is that the use of portfolios improved writing performance. This agrees with prior research in the

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field of writing which suggests that the portfolio approach increases students' writing skills and efficiency (Horvath, 1997; Moening & Bhavnagri, 1996) because it allows students to set goals (Miller & Richarde, 1991); encourages revision skills development (Schauweker, 1995); promotes long-term effort; involves self-assessment, (Miller & Richarde, 1991); permits instructor feedback at all points of the composition process (Clayton, 1998); and documents students' development as writers (Lylis, 1993). Another possible explanation of this result is that the use of computer technologies improved writing performance. This agrees with Strickland's (1997, p. 14) contention that "writing with a computer encourages a free flow of words on the screen—words easily correctable, easily expendable, and easily rearranged if not in quite the right order" as well as Clayton's (1998) belief that computer-assisted instruction facilitates the immediacy and frequency of peer and teacher-as-coach during the inventing, drafting, revising, and editing stages, thus inviting co-operative learning through technology. A further explanation is that electronic portfolios might respond to the participants' preferences to be evaluated in a non-threatening atmosphere in which students write and get feedback without face-to-face confrontations and without being exposed to the criticism of their colleagues. This might have encouraged those students to follow the feedback offered in order to become better writers. Moreover, practicing reflection during the portfolio construction process might have led to a development in those participants' writing performance. This explanation is based on the belief of some educators that practicing reflective thinking leads to better writing. For example, Kathpalia and Heah (2008) think that reflection helps students get into the habit of probing what lies beneath their writing practices and the written product, putting them well on their way to becoming better writers.

The third result was that no statistically significant difference existed in the control group mean scores between the pretest and the posttest of reflective thinking. Thus, one can say that the students of the control group did not achieve significant improvements in reflective thinking. This finding may be due to the fact that, during the period of the experiment, students in the control group did not receive any instruction with the specific purpose of improving their reflective thinking.

The fourth result was that a statistically significant difference existed in the experimental group mean scores between the pretest and the posttest of reflective thinking. Thus, one can say that students of the experimental group achieved significant improvements in reflective thinking during the period of the experiment. A possible explanation for this finding might be that the portfolio approach is useful for developing reflective thinking. This goes along with the opinions of many educators who claim that the portfolio provides an avenue for the enhancement of reflective thinking (Kavaliauskienė & Suchanova, 2009; Ying, 2004), provides a venue to demonstrate reflective thinking strategies (Petty,

2006), and is considered as a suitable way to structure and support reflective thinking processes (Meeder & Poortinga, cited in Roeder, 2007). Another possible explanation may be related to the notion that reflection was an important stage in the electronic portfolio development process which the students of the experimental group went through. A further explanation for this finding might be that using computer technologies might have increased students' reflective thinking. This explanation goes along with the opinions of some educators such as Land and Zembal-Saul (2003) who believe that technology-based tools can be used to help learners reflect on and organize ongoing ideas and make learners' thinking more explicit and visible as well as Rickards et al. (2008) who confirm that technology-based portfolios provide an operational facility for learners to move among numerous and complex performance records. They add that this facility provides a foundation for reflection on learning and performance. Moreover, electronic portfolios are believed to have provided students with an atmosphere that helped to promote their reflective thinking. This explanation agrees with Fernsten and Fernsten's (2005) assertion that one of the characteristics of portfolios that is crucial to effective reflection is the creation of a safe and supportive environment, one that fosters trust as well as growth. Here, they point out that punishing students through lower grades, admonishments, withheld recommendations, etc, when student behaviors do not correspond to accepted notions of good work is counterproductive to the goal of reflection. A final explanation for this finding might refer to that writing in this study was used to encourage reflection. Students were asked to include written reflections for each entry in the electronic portfolio as well as for the portfolio as a whole; i.e., they wrote reflectively or writing was used as a medium for reflection. This might have benefited in improving reflective thinking. This explanation appears to go along with Kish et al. (1997) assertion that writing is valued as an aid to reflection and that using writing to encourage reflective thinking is a very effective method because the use of writing in the context of a portfolio promotes a self-consciousness about the problem or issue being explored.

The fifth result was that no statistically significant difference existed in the control group mean scores between the pretest and the posttest of writing apprehension. Thus, one can say that the writing apprehension of the students of the control group was not significantly reduced. This finding may be due to the fact that, during the period of the experiment, there were no attempts to reduce the writing apprehension of students in the control group. A second explanation is that, as mentioned in the reviewed literature, writing is believed by many students to be the most difficult among language skills. This belief might cause those students to be apprehensive about writing. A third explanation is that as those students' writing performance did not improve during the experiment, their writing apprehension also did not reduce. This explanation is supported by Öztürk and Çeçen's (2007) belief that it is a possibility that students who suffer

from writing apprehension are not skillful writers and their apprehension level reflects their awareness of this problem.

The sixth result was that no statistically significant difference existed in the experimental group mean scores between the pretest and the posttest of writing apprehension. Thus, one can say that the writing apprehension of the students of the experimental group was not significantly reduced during the period of the experiment. This finding may be attributed to many possible explanations. One of them is the relative brevity of the experiment. Twelve weeks may not be an enough period to cause those students' writing apprehension to reduce significantly. It seems that it needed more time to see a significant reduction in those students' writing apprehension. Besides, those students were not accustomed to constructing electronic portfolios. As Darling (cited in Butler, 2006) explains, a lack of examples of past portfolios can lead to student confusion and anxiety about the scope, nature, and value of the task. This goes along with Elliott, Daily, Fredricks, and Graham's (2008) findings which indicate that writing anxiety was a major obstacle to portfolio implementation.

A third possible explanation for this finding is that those students were not accustomed to using computers in writing their essays which might have led them to feel uneasy about using this innovation which might have shared in their writing apprehension. A fourth explanation for this finding may be due to students' knowledge that what they wrote would be kept to be included in their electronic portfolios and not thrown away. This might have led them to be more apprehensive about what they wrote because they knew that it would be viewed over and over by the researchers and might last for longer periods after the course. A fifth explanation for this finding might be attributed to the fact that participants of the present study were at their final year at the faculty; therefore, writing was becoming more important to their academic success which might have increased the pressure on those students to be better writers and this might have increased their writing apprehension to such a degree that electronic portfolios alone could not reduce it significantly.

The seventh finding was that "a statistically significant difference existed between the mean gain score of the control group and that of the experimental group in reflective thinking." This means that the gain scores in writing performance for the experimental group were significantly higher than the gain scores in writing performance for the control group. This can be attributed to the beneficial effect of electronic portfolios on writing performance mentioned in the discussion of the finding related to the second hypothesis of the study.

The eighth finding was that "there would be no statistically significant difference between the mean gain score of the control group and that of the experimental group on reflective thinking." This means that the gain scores in reflective thinking for the experimental group were significantly higher than the gain scores in reflective thinking for the control group. This can be attributed to

the beneficial effect of electronic portfolios on reflective thinking mentioned in the discussion of the finding related to the fourth hypothesis of the study.

The ninth finding was that "no statistically significant difference existed between the mean gain score of the control group and that of the experimental group in writing apprehension." This means that the gain scores in writing apprehension for the experimental group were not significantly lower than the gain scores in writing apprehension for the control group. This can be attributed to the problems associated with writing apprehension mentioned in the discussion of the finding related to the sixth hypothesis of the study.

Although the results of this study were satisfactory, they should be cautiously generalized due to several limitations. First of all, the number of participants was low. Second, the study was conducted in Suez Faculty of Education where more technical facilities are readily available. Finally, the study contained just one compulsory course and one subject area.

XIII. Conclusions

From the results of the present study, the researchers concluded that:
A. Electronic portfolios had a significant effect on the writing performance of EFL student teachers.
B. Electronic portfolios had a significant effect on the reflective thinking of EFL student teachers.
C. Electronic portfolios did not have a significant effect on the writing apprehension of EFL student teachers.

XIV. Recommendations

In light of the present study, the following recommendations have been formulated:
A. University teachers should begin to reconsider their strategies of teaching and assessing writing.
B. Writing constitutes a problem for most students which may lead some students to become apprehensive writers. Therefore, teachers should attempt to reduce students' apprehension about writing.
C. Teachers using traditional portfolios should consider using electronic portfolios, especially if they have in their schools or faculties the technological infrastructure that would enable them to try this innovation.
D. Teachers should encourage students to take part in the evaluation of their writing performance.
E. Students should be given enough opportunities to use modern technology in their learning; i.e. e-mails, web logs, SMSs, etc.

F. **Egyptian EFL university teachers should develop their technological skills to be able to use innovative computer-assisted instructional techniques.**
G. **Electronic portfolios should be used at the university level in the teaching and assessing of writing performance.**
H. **Reflective thinking should be encouraged in most of the subjects at college level.**
I. **Other authentic devices of assessment should be investigated to reduce writing apprehension.**
J. **Faculty of Education staff members should be trained in how to infuse reflective thinking tasks into TEFL college courses.**

XV. Suggestions for Further Research

Based on the present study, the researchers suggest the following areas for future research:
A. **A study of the effect of electronic portfolios on reading performance.**
B. **A comparative study between the effect of different portfolio types (e. g. paper portfolios vs. electronic portfolios; showcase portfolios vs. working portfolios) on reading and writing performance.**
C. **An investigation of the attitudes of students and teachers toward the use of modern technology and electronic portfolios in learning, teaching, and assessment.**
D. **Using electronic portfolios to develop oral skills.**
E. **Impact of electronic portfolios on computer anxiety.**
F. **Using electronic portfolios in teaching practice to develop student teachers' teaching skills.**
G. **Using electronic portfolios for in-service teachers' training programs to develop some professional skills.**

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استخدام ملفات الإنجاز الإلكترونية لتنمية الأداء الكتابي والتفكير التأملي لدى الطلاب المعلمين بشعبة اللغة الإنجليزية وخفض التخوف من الكتابة لديهم

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الملخص:

تناولت الدراسة الحالية استخدام ملفات الإنجاز الإلكترونية لتنمية الأداء الكتابي والتفكير التأملي لدى الطلاب المعلمين بشعبة اللغة الإنجليزية وخفض التخوف من الكتابة لديهم.

أجريت الدراسة علي مجموعتين من طلاب الفرقة الرابعة بشعبة اللغة الإنجليزية بكلية التربية بالسويس- جامعة قناة السويس إحداهما تجريبية (١٥ طالبا) والأخرى ضابطة (١٥ طالبا). تم إعداد اختبار قبلي و آخر بعدي للأداء في الكتابة- مقياس لتصحيح الأداء في الكتابة- اختبار في التفكير التأملي- مقياس لتصحيح اختبار التفكير التأملي- مقياس للتخوف من الكتابة. كما تم تصميم دليل يساعد الطلاب علي تصميم ملفات الإنجاز الإلكترونية بالإضافة إلي تدريب الطلاب علي عمل ملفات الإنجاز الإلكترونية لمدة فصل دراسي كامل قبل أن تبدأ التجربة التي استمرت لمدة ثلاثة أشهر كانت الباحثة الثالثة خلالها تقابل الطلاب مرة كل أسبوع حيث تتم مناقشة أحد الموضوعات ثم يقوم كل طالب بعد ذلك بكتابة مقال حول هذا الموضوع وإرساله للباحثة عبر البريد الإلكتروني. وكانت الباحثة تقوم بقراءة المقال وتشخيص مواطن القوة والضعف به ثم ترسل هذه التغذية الراجعة للطالب عن طريق البريد الإلكتروني أيضا ليقوم بتعديل مقاله وفقا لها. وكانت الباحثة تطلب من طلاب المجموعة التجريبية الاحتفاظ بالمقالات في صورتها الأولية والمعدلة. بعد ذلك قام كل طالب من طلاب المجموعة التجريبية بانتقاء بعض من هذه المقالات في ضوء معايير حددتها الباحثة وقام بعمل تأملات علي كل مقال منها بالإضافة إلي تأملات علي ملف الإنجاز ككل. ثم قام كل طالب بتنظيم هذه المقالات والتأملات في موقع الكتروني يمكن تصفحه عن طريق الوصلات النشطة كما يمكن وضعه علي اسطوانة مدمجة أو علي الإنترنت. بعد انتهاء التجربة تم تطبيق الاختبارات البعدية علي جميع الطلاب. ولقد جاءت نتائج الدراسة الحالية كما يلي:

١. ملفات الإنجاز الإلكترونية لها أثر دال على الأداء الكتابي للطلاب المعلمين بشعبة اللغة الإنجليزية.
٢. ملفات الإنجاز الإلكترونية لها أثر دال على التفكير التأملي للطلاب المعلمين بشعبة اللغة الإنجليزية.
٣. ملفات الإنجاز الإلكترونية ليس لها أثر دال على التخوف من الكتابة لدي الطلاب المعلمين بشعبة اللغة الإنجليزية.

كما أوصت الدراسة من خلال نتائجها (١) بضرورة إعطاء الفرصة للطلاب لاستخدام وسائل التكنولوجيا الحديثة مثل البريد الإلكتروني والمدونات الإلكترونية والرسائل القصيرة . . . إلخ. (٢) بضرورة أن يقوم المعلم الجامعي بإعادة النظر فى الطرق التي يدرس بها الكتابة. كما اقترحت إجراء مزيد من الدراسات عن: (١) أثر ملفات الإنجاز الإلكترونية علي الأداء القرائي (٢) أثر ملفات الإنجاز الإلكترونية علي المهارات الشفهية.