PREPARING ESL STUDENTS FOR UNIVERSITY LEVEL WRITING: THE INFLUENCE OF USING AN ELECTRONIC PORTFOLIO AS A LEARNING TOOL ON ESL STUDENTS' WRITING MOTIVATION AND PERFORMANCE

Ali Alshahrani

A Thesis Submitted in Fulfilment of the Requirement for the Degree of Doctor of Philosophy in Applied Linguistics

Newcastle University

December 2011

Abstract

Thousands of English as a Second Language students in Western universities strive to meet the daily challenge of preparing written assignments. These texts need to comply with the demands and preferences of their university lecturers with regard to clarity of meaning, the logical flow of ideas and the use of an academic vocabulary. However, a characteristic of ESL students' written work is a weakness of content and a lack of logical organisation of their ideas (Roberts and Cimasko 2008). In many intensive English language programmes, students are taught to use the process-writing approach, the success of which is related to how it is perceived and introduced to the students (Lefkowitz 2009). Atkinson (2003) emphasised that the process-writing approach perceives writing to be a cognitive process that is highly private or individualistic, where writers use specific cognitive phases, such as pre-writing, drafting, and revising, to generate their text. However, writing has been increasingly recognized as a socially and culturally situated activity connecting people with each other in ways that carry particular social meanings (Hyland 2003). Despite this view of writing as a social act, Lefkowitz (2009) claimed that many English Language Programme Centres (ELPCs) superficially implement process-writing in class by aiding students in revising their essays to achieve grammatical accuracy; however the generation, formation and revision of ideas are considered to be of less importance.

This study investigates the use of an electronic portfolio (TaskStream e-portfolio) in an ESL writing course as a tool to support students as they work through the key phases of the writing process. The aim was to help them adopt a consistent approach to their writing practice (self-consistency), to encourage a positive view of the value and importance of writing (self-belief), to foster a realistic appraisal of their strengths and weaknesses as writers (self-judgement), and to examine the relationship between these characteristics and the students' overall writing performance. To that end, the study addressed four main questions:

- Does utilising a web-based learning platform encourage a change in ESL learners' writing self-belief?
- Does utilising a web-based learning platform encourage a change in ESL students' writing self-efficacy?
- Does utilising a web-based learning platform encourage ESL students to consistently apply a process approach to writing?
- Does utilizing a web-based learning platform lead to a change in ESL students' overall writing performance?

Using a non-equivalent pre-/post-test quasi-experimental research design, 46 ESL students from the same English Language Centre were recruited. The students were divided into a control group and an experimental group and the study ran during the spring and summer terms of 2010. A mixed methodology was used, consisting of an online questionnaire, writing sampling, online tracking and interviews in order to collect relevant data.

The findings from the pre-test showed no significant differences between the participants in the two groups. The post-intervention results indicated no significant improvement among the control group's motivational constructs and performance in writing, whereas significant differences were found in the experimental group's writing performance and in the students' perceived value with regard to writing, writing self-concept, writing self-efficacy and writing process approach self-consistency, following the implementation of the web-based course. However, no significant differences in ESL students' anxiety about writing were observed.

These findings suggested that e-portfolio software has the potential to promote change in ESL students' writing self-belief and performance. Limitations of the study are discussed, implications of the findings explored, and recommendations for further research in this field are suggested.

Dedication

I dedicate this work to

Moneerah Alma'weid, my soul mate

for her unwavering love, support and confidence.

Acknowledgements

Many people have contributed in one way or another to the completion of this thesis and I owe them a substantial debt of gratitude.

First, I would like to express my deepest gratitude for the constant support, understanding and love of Nadha, Moneerah, Abdulelah and Omer since I met them.

Second, I am grateful for my supervisor, Scott Windeatt, for his guidance, support and meticulous feedback in every phase of the research design and thesis writing. Also to Katie Scott for her valuable comments and assistance on earlier versions of the research questionnaire.

Third, I am deeply grateful to the participants who so generously gave their time and effort to help me conduct this study.

Finally, I would like to thank Professor Paul Seedhouse and Professor Steve Higgins for providing me with many insightful and useful comments, and who helped make the oral defence a positive experience.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

1.1 Statement of the problem and the research gap

Increasing numbers of ESL students seek to obtain undergraduate and postgraduate degrees which use English as the medium of instruction in UK and North American universities. Most such students who initially fail to fulfil the institution of choice's language proficiency criteria usually gain conditional admission which requires them to study at English Language Programme Centres (ELPCs). University enrolled ESL students strive to prepare writing assignments and write research papers for their courses to conform with the demands and preferences of university instructors concerning clarity of meaning, the logical flow of ideas and the use of academic vocabulary (Roberts and Cimasko 2008). However their writing can still suffer from weaknesses of content and meaning and the logical organization of ideas (ibid). Wette (2010) noted frequent ambiguities of meaning in ESL students' writing, and referred to their poor choice of words and verbs as a result of their inadequate knowledge of academic vocabulary. Writing is the most difficult language skill for both native and non-native learners to master (Carter and Nunan 2001).

This difficulty can be interpreted in terms of the complex nature of writing as a socio-cognitive task that involves ESL learners' inter-personal (social) interaction with peers and instructors, and their interaction with teaching

material and teaching processes within their learning context. With effective scaffolding, better understanding is attained, and knowledge and/or experience are co-constructed. These constructed experiences and knowledge are shifted onto the intrapersonal plane to be internalized when expressing meaning in their individual writing. At this stage, students are more comfortable with the language learning process (Vansteenkiste, Simons, Lens, Soenens and Matos 2005).

Numerous studies in Second Language Writing have investigated the writing process approach and have indicated its contribution to both writing research and the practice of teaching writing as a cognitive process that is highly private or individualistic (Atkinson 2003). The process-oriented approach views writing as an isolated process by which the writer works through specific cognitive phases such as pre-writing, drafting, and revising, to generate his/her text. However, writing has been increasingly recognized as a socially and culturally situated activity, connecting people with each other in ways that carry particular social meanings (Hyland 2003). Despite this view of writing as a social act, Lefkowitz (2009) claimed that many ESL writing classes only superficially implement the process approach by allowing students to revise their essays. He stressed that the main concern was revision to achieve grammatical accuracy, and sometimes that ideas generation, formation, and revision were almost secondary. These findings echo Hubert and Bonzo's (2010) identification of low levels of both knowledge about, and the implementation of, writing-process theories among ESL writing instructors in 153 university ELPCs in the USA.

The Second Language Writing literature reveals that, in an activity as complex as writing, motivational issues are of great importance in the development of writers who should persevere in learning and practising skills in order become proficient (Hayes and Nash 1996). Writers need to develop strong beliefs in the relevance and importance of writing, as they grapple with its complexities and frustrations. This requires patience, persistence and flexibility. Bruning and Horn (2000) examined the key issues affecting the development of the motivation to write, and claimed there was a need to enhance student beliefs in, and confidence about, the nature and potential of the writing process. This would include both the sense of one's writing's power and value as an intellectual and social tool, and the development of a more realistic understanding of the difficulty in developing self-confidence in one's writing abilities. Also, creating authentic writing task goals in real audience contexts is likely to provide motivational support, to help students to develop a sense of their own writing voice and convey the writing's pragmatic purposes. Finally, students need to practice the use of various techniques and strategies in different situations when writing about complex topics, including defining goals, outlining the main points, drafting, and interpreting feedback. Boscolo and Hidi (2007) indicated that motivational constructs can be divided into three main areas of motivation with regard to writing: self-belief (self-efficacy and self-concept); motives to act (interest in writing and writing perceived value) and writing self-regulation.

In accordance with the movement toward learner-centred learning environments, researchers have called for the adoption of more socially situated writing tasks where writers interact with their peers and audiences from outside the classroom in authentic contexts (Atkinson 2003; Lefkowitz 2009). In response, recent web-based applications have been designed to permit the learner's to take control of the learning process in social and authentic contexts, through the use of electronic portfolios, which represent the 21st Century personal learning environments (Barratt 2009; Hill et al. 2009).

This study investigates the use of an electronic portfolio (TaskStream E-portfolio) in an ESL writing course as a tool to support students as they work through the key phases of the writing process. The aim was to help them adopt a consistent approach to their writing practice (self-consistency), to encourage a positive view of the value and importance of writing (self-belief), to foster a realistic appraisal of their strengths and weaknesses as writers (self-judgement), and to examine the relationship between these characteristics and the students' overall writing performance. These two areas continue to pose important questions in the growing research into writing and motivation (Zimmerman 2008) which require further examination. The present study was initiated in order to add to the emerging literature about the use of web-based applications in the ESL writing context (Hirvela and Pierson 2000), and is an attempt to bridge these gaps in CALL, ESL writing, and motivation research.

1.2 Purpose of the study and research questions

This study investigates the effect of using the TaskStream e-portfolio as a web-based learning platform in an intermediate level ESL writing course, on the learners' writing motivational constructs, the consistent use of process-writing in their writing tasks, and on their writing performance.

The main research question and four sub-questions define the focus and scope of the study:

Does implementing a web-based learning platform in an intermediate level ESL writing course change the learners' writing self-belief, writing self-efficacy, and self-consistent use of the writing process, and does it change their writing performance?

In order to investigate this research question, the researcher sought to answer the following research questions:

> Does utilizing a web-based learning platform encourage a change in ESL learners' writing self-belief?
>
> Does utilizing a web-based learning platform encourage a change in ESL students' writing self-efficacy?
>
> Does utilizing a web-based learning platform encourage ESL students to consistently apply a process approach to writing?
>
> Does utilizing a web-based learning lead to a change in ESL students' overall writing performance?

1.3 Outline of the chapters

Chapter 2 offers a theoretical and empirical framework for the study by reviewing the current literature on the nature of writing in an ESL context, approaches to writing instruction, sociocultural theory, and writing motivational constructs. The literature pertaining to integrative CALL and E-portfolios and E-portfolio software as a web-based learning environment is also reviewed in Chapter 2.

Chapter 3 explains the quantitative and qualitative mixed methods used in conducting the research. It describes the research design, the study setting and the participants, the selection of instruments used to collect data and the methods used for analysis.

Chapter 4 presents the results of the quantitative analysis of the research data. It provides information on the backgrounds of the participants, and their writing motivational constructs through their responses to the questionnaire. The overall writing performance of ESL students after they had utilized a web-based learning platform in their writing course is then discussed. The relationships between the ESL students' writing motivational constructs and their writing performance are reported.

Chapter 5 presents the results of the analysis of the interviews, showing participants' perceptions about writing self-belief, writing self-efficacy and process-writing self-consistency, prior to the intervention, and following the use of the web-based learning platform. It presents an analysis of the interview data using the study's predefined themes (the research questions)

and introduces new themes which emerged in the second interview sessions following the study intervention.

Chapter 6 summarises the research findings, and discusses their relationship to the existing literature.

Chapter 7 draws conclusions about the study, and discusses some of the implications of the findings. The limitations of the study and recommendations for further research in this field are then considered.

Chapter 2: Literature review

2.1 Overview

This chapter discusses the literature pertinent to the main topics of this study: writing in English as a second language; sociocultural theory; writing and its motivational constructs; and electronic portfolios. Section 2.2 describes the nature of writing in English as a second language, and reviews the salient stages in the development of ESL writing approaches which coincide with the development of theories of second language acquisition. It also pinpoints the current teaching of English as a Second/Foreign Language in the study with participants from diverse backgrounds. Section 2.3 then discusses the adoption of Sociocultural Theory in applying the process-approach, including its central tenets of the zone of proximal development, mediation and scaffolding. The motivational constructs of writing in terms of self-concept, self-efficacy, interest in writing, writing's perceived value and self-regulation, are discussed in Section 2.4, while Section 2.5 deliberates on the use of electronic portfolios. The history of the 21st Century integrated CALL software is briefly introduced, defining what an e-portfolio is and the features required for an e-portfolio to be used as a social learning web-based learning environment. This section also introduces criteria that can help university administrators and teaching staff in selecting e-portfolio software to fit their institution's educational, technological and financial resources. The criteria that I used in selecting the TaskStream e-portfolio and its features and tools are discussed. The final part of this section reviews the

literature relevant to using the e-portfolio as a writing/literacy learning tool, and concludes with a discussion of the limits of those studies and the need for the present study.

2.2 The nature of writing in a foreign language

Writing, the formal visual representation of thoughts, is not a direct or straightforward process of putting words and ideas directly on paper at any moment, but a task that requires great effort, concentration and discipline (White 1987; Smith 1989). This is because writing is a most intricate and challenging language macro-skill for both native and non-native learners to learn (Kroll 1990), where learners must continuously learn writing in formal instruction situations, and practise through experience (Grabe and Kaplan 1996). It is a complex set of conscious processes (planning, brainstorming, drafting, revising, editing) that requires formal and organized teaching to help the learner demonstrate control over these processes simultaneously, in order to produce new texts (Emig 1971). Vygotsky (1999) repudiated the idea that native speakers learn writing skills in the same sequence as is the case with learning to speak or to read, stating that writing or written expression is a "…separate linguistic function, differing from oral speech in both structure and mode of functioning" (pp.180-181). Writing requires a high level of abstraction that entails the learner separating him/herself "…from the sensory aspect of speech and replace words by images of words" (p. 181). Writing is "…speech without an interlocutor, or one who interprets or questions, and this is new to the [learner]" (p.181). Vygotsky pinpoints the fact that learners understand the need to talk or read, because there are

motives for each of these activities, but writing is an abstract concept to the learner and one that requires detachment from a situation. Therefore a learner may lose interest and motivation in learning to write. Harris and Graham (1996) provide an explanation for the learners' loss of motivation and interest in writing, which results from the fact that there is no immediate interaction with the reader to check whether the writer's message has been conveyed.

Writing is a set of extremely complex cognitive processes and sub-processes that the writer employs in the writing process. This naturally applies foremost to the learner's first language, but also to a foreign language situation. If the former's view of foreign language teaching as mere reinforcement through pattern drills has been abandoned, and language teaching is, instead, concerned with teaching language as a "…system of communication rather than as an object of study" (Weigle 2002, p.1), then this view of the complex nature of the writing process is also clearly relevant to the teaching of English writing. The ability to write in another language therefore involves not just knowing something about the structure and vocabulary of the target language, but also knowing how to manage these complex writing processes (ibid).

2.3 The product-oriented approach

Matsuda (2003) discussed how, at the end of the 1950s and the beginning of the 1960s, Fogarty coined the term "current-traditional rhetoric approaches" to refer to the different methods of writing instruction during that period, focusing mainly on the correctness of the final product's grammar and

rhetorical style. Behaviourist theory dominated views of language acquisition at that time, and learning was viewed as a process of habit formation. This view of habit formation served as the linguistic theoretical framework for product-oriented approaches that strongly highlighted the correctness of the writer's grammatical, mechanical, syntactical structures, and the use of appropriate rhetorical style and the emulation of product models in the composition process. Based upon the level of structure, these product-oriented approaches and methods can be categorized into two main phases: a focus on sentence-level structures or on the rhetorical or discourse-level structures (Santos 1992; Chiang 2002).

The sentence-level structures phase of L2 writing instruction used pedagogical methods which focused on the translation of classical literature and religious works from Greek or Latin into the learner's language. Writing classes were devoted to extensive analysis of grammatical rules, features and usage (Freedman et al. 1983), and the rote memorization of lists of isolated vocabulary obtained from various declensions and conjugations to be used in direct and literal word-to-word translations of each sentence (Brown 2001). Therefore, this method is labelled as the grammar-translation method of second language learning, where little attention was paid to the content of the text which was employed in grammatical analysis exercises, since writing was seen as just another way of practicing grammar (Reid 1993). Homstad and Thorson (2000, p.5) indicated that "The teacher-centred classroom and the emphasis on grammatical accuracy have remained at the

core of the grammar-translation approach even when adapted to teaching modern languages".

By the late 1940s and 1950s, many teachers realised that the product-oriented approach of the grammar translation method, with an emphasis on the correctness of the text, somehow impeded the expressive goal of writing which involved focusing on the writer's authentic voice (Emig 1971; Elbow 1973). Instead, teachers felt constrained by the teaching of discrete grammatical structures, Standard English rhetorical style, and mechanical patterns of spelling, punctuation, grammar and vocabulary. This view was also influenced by the 1940s and 1950s structural linguists' scientific descriptive analysis of various languages. The language teaching profession responded to these theoretical trends with an application of this descriptive analysis to the teaching of linguistic patterns, and abandoned the behaviourist approach with its habit-formation models of language acquisition and drills in patterns of practice (Brown 2001). A new teaching approach then reinforced aural/oral language patterns in the 1960s, and was known as the audiolingual method. This approach was firmly grounded in linguistics and psychological theory.

The audiolingual method considered writing to be a secondary skill that could be acquired through the accurate application of grammatical rules in drill-and-practice exercises involving copying sentences, paragraphs or essays and correcting errors. This method focused on accurate linguistic features, and neglected the purpose of writing and the communicative components of the audience. Writing instruction concentrated on repetitive

drills of structural patterns, with a tendency to emphasise the imitation and manipulation of language patterns, and to disregard context in view of the fact that second language learners were not expected to write in order to communicate, but merely to achieve grammatical accuracy (Harrington et al. 2000; Matsuda 2003). These exercises varied according to the learners' proficiency levels. Beginner level learners' practice involved repetitive fill-ins, sentence-structure patterns and manipulating fixed linguistic patterns. Learners' successful responses were immediately reinforced. The advocates of the audiolingual method believed that the writing skills of L2 advanced level learners could be improved through imitating good English writing essay models (Silva 1990). Teachers carefully constructed writing tasks to oblige learners to manipulate vocabulary and the linguistic structures of practiced patterns. This type of writing task is referred to as controlled composition. Raimes (1985) depicted the audiolingual method's controlled composition technique of teaching L2 writing concisely as follows:

"Teaching procedures for ESL writers were to move in lockstep fashion from the sentence to the paragraph, from controlled composition to guided essays, and only when they had achieved near-native proficiency were they allowed to really compose" (p.322).

The discrete focus on grammatically correct structures in terms of the final product in either sentences or paragraphs was the distinctive feature of the approaches employed in the first half of the 20th Century. However, this tendency did not lead to correct written products on the part of L2 learners, as the students were from different cultural and linguistic backgrounds. L1

transfer and interference negatively influenced the organization of their texts (Grabe and Kaplan 1989; Grabe 2001), which led to a shift of focus to the rhetorical or discourse level of structure, marking the second phase of product-oriented approaches. Teachers started to include different rhetorical styles, employing them in their controlled composing tasks, in order to make their L2 students aware of the target language's organization and structure. Learners were assigned tasks of paragraph completion, sentence sequencing, and identifying topic and supporting sentences (Silva et al. 1997).

Despite the differing views of behaviourist and structuralist linguistic and psychological theories in the 1950s and 1960s, and the pedagogical methods employed (grammar translation, audiolingual, rhetoric contrastive and error analysis), the product-oriented (current- traditional) approaches can be viewed as linear, step-by-step processes (Squires 1991) that treated writing as another form of tedious grammar practice that would lead to improvements in ESL learners' writing, and in which learners' speaking fluency would be reflected in the quality of their writing (Reid 1993). Teachers were at the centre of these product approaches which introduced a framework that explicitly demonstrates a specific pattern of rhetorical organization. The students had to construct their ideas to fit the given framework in terms of content and format. The students' practical activities in writing focused on the sentence and paragraph levels of organization. Teachers acted as the readers of their students' writing, marking, and commenting on it then returning it to students as the final stage. Although the imitation of rhetorical patterns of organization is a suitable method at an

early stage of developing writing proficiency, this approach undermines the role of the writer as the developer of products in the various phases of the writing process.

Al-Hazmi and Scholfield (2007) noted that, in the Arabic World, English teachers present model texts for their students to imitate and copy. Much of the teaching instruction is about grammatical structures and vocabulary. Teaching writing is presented through teaching the mechanical elements of indentation, capitalization, and punctuation, while writing down memorized models in answering writing task questions (Al-Shahrani 2004; Al-Jamhoor 2005), rather than promoting useful writing skills. El-Aswad (2002) specified that product-oriented methods have dominated L2 writing instruction at Libyan public schooling and university level. You (2004) also emphasized that the English language writing curriculum in Chinese colleges still concentrates on grammatical accuracy and appropriate rhetorical styles. Casanave (2003) further stated that the Japanese educational system relies on product-oriented approaches in teaching writing, and that students should make accurate choices in writing grammar and choosing vocabulary in their translation. Huang (2004) indicated that English writing classes in Taiwan mostly use product-oriented instruction methods that see the teacher as the authoritative carrier of knowledge, who usually concentrates on filling students' minds with knowledge about writing, or of grammar rules, while the students passively receive instruction. Porto (2001) indicated that product-oriented approaches are the core instruction approach to ESL in Argentina's university level English programmes. She went

further to predict the reluctance of those leading these programmes to change their instruction methods.

2.4 Process-oriented approaches

Teachers have started to shifted their instruction methods from focusing on the accuracy of the final product's grammatical and rhetorical patterns into providing assistance and feedback to students during the different writing processes of "planning", "drafting" and "revising" (Crowley 1998). This shift was strongly influenced by the 1970s rationalism and the cognitive learning theories of psychology that were concerned with thinking, whereby "Learning results from inferences, expectations and making connections. Instead of acquiring habits, learners acquire plans and strategies, and prior knowledge is important" (Hartley 1998, p.18).

In contrast to the product-oriented approach, the process approach reallocates the final product of the composing process in terms of the scale of importance to have an equal value to the other stages of the writing process which the writer works through until creating the final draft. These stage-to-stage movements "…break down the writing task as a whole into its constituent parts, makes writing less daunting and more manageable to the ESL student" (Holmes 2004).

There is no consensus amongst researchers about what the writing process entails. MacArthur and his colleagues perceive the writing process as a "…loosely monitored series of steps, a natural process in the context of authentic tasks, without explicit instruction in planning, revising, and other

strategies" (1995, cited in MacArthur et al. 2008, p.279). Graham and Harris (1998) regard this view of the writing process as an indirect writing instruction method, while other researchers such as Defo (2000) and Honeycutt and Pritchard (2005) view the writing process in terms of direct instruction and guided practice. Cramer (2001) views the process of writing as a "…set of theories, procedures, and activities which emphasize the operations, changes and procedures by which writing is accomplished" (p.53). Despite these different views as to the process of writing, most researchers and writing instructors would support Rohman's model of the writing process. This consists of three main stages: the pre-writing stage, the writing stage, and the rewriting stage, and represents the cornerstone of the different models used in process-oriented approaches (Pritchard and Honeycutt 2008).

Generally, these entail different forms of brainstorming, selecting and ordering ideas, planning/outlining, drafting, redrafting, revising and editing. The movement from one stage to another is not linear but flexible and recursive, allowing the writer to improve the written text. (Raimes 1985, cited in Tribble 1996).

2.4.1 The writing process model

Emig (1971) conducted a case study research project to investigate writing styles by interviewing professors at Harvard University, and examining the writing process strategies used by eight students in the twelfth grade of a middle class Chicago north-suburban school. In this pioneering and seminal

research in this area, Emig used triangulation methods in the form of think-aloud protocols (audiotaped), classroom observation, interviews, and the analysis of the students' written products to collect rich data. She scrutinized and analysed data from various sources, and noticed that planning is not a unitary stage. That is, planning does not occur at just the first step of the writing process, but takes place before and during the writing process, in that students exhibit a variety of writing behaviours while constantly trying to discover the meaning that conveys their thoughts. She found that students follow a non-linear process while composing, a recursive process that reflects the nature of writing.

Building on Emig's research findings of the non-linear nature of writing, Flower and Hayes (1981) proposed a paradigm to investigate the cognitive operations involved in the writing process. Their study investigated how the different processes that affect thinking about how to write, interact while writing. There was a consensus among researchers that there are many factors that affect the process of writing, such as purpose, audience, topic, the link with the audience, and knowledge of syntax and vocabulary. What was not clear is how these different variables interrelate. They presupposed that there were many different types of main cognitive processes concerning the task environment, the writer's long-term memory and the writing process, and that each main process involves sub-processes that have a sophisticated level of organization. They noticed that writers follow a recursive writing model that consists of three main stages while composing their writing. These stages are: 1) the planning stage, which embraces the

processes of generating ideas, collecting information from different sources, and setting the writing aims); 2) the translating (composing) stage, where the thoughts are transferred into visible text. This transformation involve the application of various linguistic and rhetorical structures; and 3) the reviewing stage where the writers evaluate their writing products and conduct necessary revisions. Flower and Hayes' (1981) cognitive model processes and sub-processes are explained further below:

Task environment

The task environment encompasses the rhetorical problem, the writing topic assignment, the target audience of the writing, and the goals the writer aims to achieve through composing. These concerns have to be taken into consideration during the different composing processes, which are hierarchical in nature and are closely interconnected with each other.

Long-term memory

Long-term memory is the second constituent of the writing model, denoting the reservoir of knowledge about the writing task that the writer uses (topic, situation, audience, rhetorical problem, goals, etc.). Writers have to be vigilant when retrieving items of pertinent information that can be reorganized and restructured so as to efficiently resolve the rhetorical problem. This task demands a shift to a reader-based position to assess how clear the written ideas are.

The writing process

The planning process

Generating ideas is the first sub-process. This encompasses the simultaneous retrieval of pertinent information from the task environment and from long term-memory. As appropriate items of information related to the writing task are retrieved, the writer makes a note of each idea, either in just a few words or in short sentences. The retrieved knowledge could be retrieved in the form of symbols or even images. If the retrieval operation yields irrelevant entries, then the sub-process of generating ideas is terminated. A new retrieving operation then begins with a new memory search. The second sub-process is the organization of the retrieved entries. At this stage, the writer puts his/her ideas into a cohesive structure and coherent style in order to synthesize the writing task framework (outline), so that it is more meaningful and more comprehensible. The third and final sub-process of the planning stage is goal setting, which involves evaluating the suitability of the framework and information in order to achieve the specified goals in the task. This process entails writers altering their thoughts, generating new ideas and reorganizing their writing framework so as to comply with the assigned goals. This is the process whereby "…writers juggle and integrate the multiple constraints of their knowledge, their plans, and their text into the production of each new sentence" (Flower and Hayes 1981, p.371).

Translating

The second process in the writing process is translating. This refers to the act of composing when writers transform established ideas from their linear or hierarchical framework into key words and then into sentences to structure a text in such a way that it is cohesively and coherently organized. Translating these ideas into grammatically and rhetorically appropriate text does not always result in what the writer is aiming to produce as the final product. Hayes and Flower (1983, p.209) explained this as follows:

> "Writers have some more or less developed representations encoded in one form. The act of translating this encoded representation to another form (i.e., written English) can add enormous new constraints and often force the writer to develop, clarify, and often revise that meaning. For that reason, translating often sends writers back to planning. Often these processes alternate with each other from one minute to the next".

Reviewing

Reviewing is the third process in Flower and Hayes' (1981) model of the writing process which consists of consecutive phases. It involves the two sub-processes of evaluating and revising the meaningfully articulated text. Writers scrutinize the content of their written products to detect any unsatisfactory organization of ideas which impedes the elicitation of meaning, or which contains incorrect grammatical structures or rhetorical patterns. This initiates the revision process. Revision necessitates a new search with a new memory probe, and consequently invokes a new cycle of planning and translating. The reviewing process can take place as the writer notices a pattern of disincentive in the form of an error or inappropriate

word choice or use, whilst translating or reviewing. This is not an act which happens on the spur of the moment. Instead, researchers such as Flower and Hayes (1981) and Hayes (1996) emphasise that writers should allocate an adequate amount of time to the systematic inspection of their writing throughout, and at the end of, their composing process.

During the different processes and sub-processes, writers should actively monitor the progress of their composing. Monitoring is a continuous process of assessment and judgment of the written text to create a final product that satisfies the task's aims, and fulfils the requirements of the composition assignment. To achieve this goal, monitoring acts as a bridge that facilitates connections between the three composing stages so as to "…coordinate and examine the mental manipulation in sustaining and shifting the focus of attention among different strategies in order to ensure the writing progress and quality" (Chien 2009, p.46).

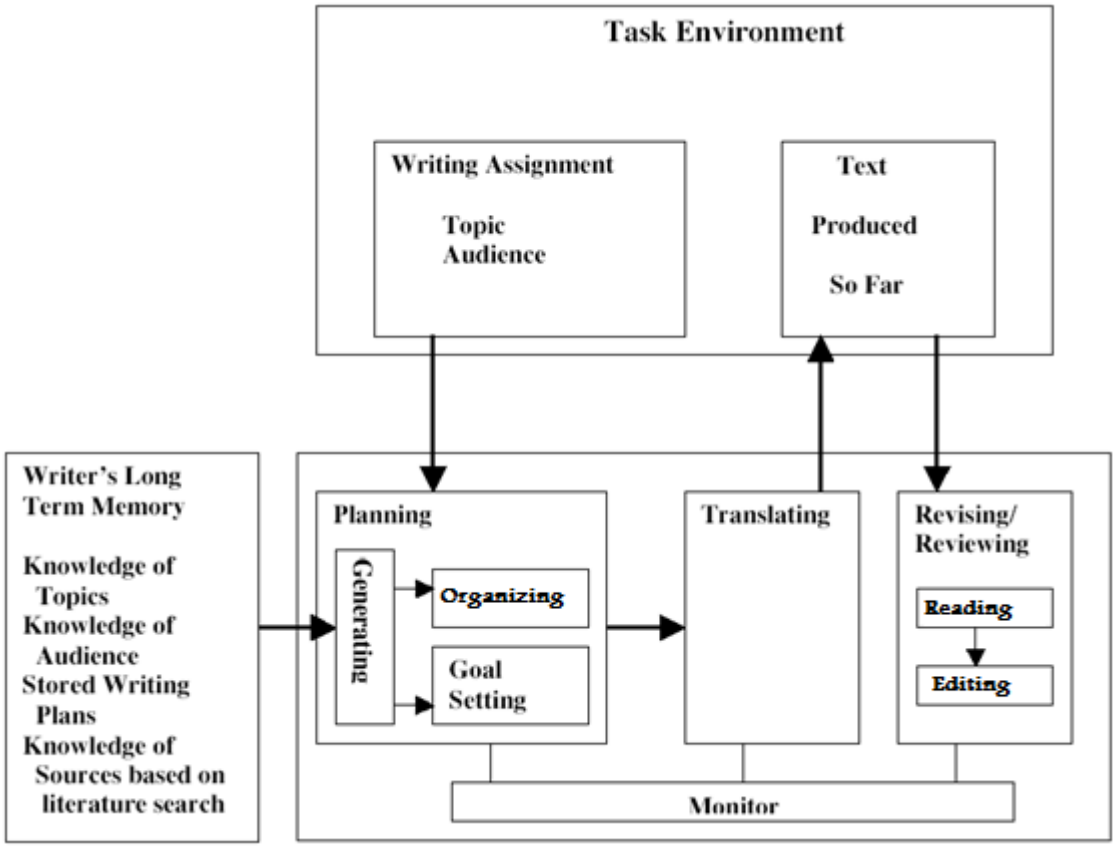


Figure 2.1 The cognitive process model of the writing process (Flower and Hayes 1981, p.370)

Flower and Hayes emphasized in their model (see Figure 2.1) that the non-linear model for recursive composition consists of separate successive phases which are hierarchically and sequentially arranged and which operate in a recursive rather than a linear manner. Despite the prominent reputation of this model and its influence in altering writing instruction, it has received some criticism. Cooper and Holzman (1983) considered it appropriate only to writers who had been trained to employ it, as well as to talented writers. The view that the Flower and Hayes' model is only employed by skilled, trained and gifted writers, is advocated by Beretier and Scardamalia (1987) who view this model of the writing process as relevant to expert writers and

doubt that it is employed in the writing process by novices and unskilled writers. They argue that skilled writers use a knowledge-transforming model while composing. This model allows the writer to confront the task problem in scrutinizing and situating their writing framework (the outline) and to generate sufficient and adequate information from internal resources before composing (Grabe and Kaplan 1996). Conversely, novices or unskilled writers follow a knowledge-telling model, with a tendency to start composing without any noticeable planning. Novice writers tend to make their writing straightforward and unsophisticated in order to demonstrate proficiency.

During the writing process, novices tend to write what arises in their minds, and are often preoccupied with thinking about what they could say next. While composing, they seldom keep an eye on coherence. For them, coherence only applies within the sentence or paragraph-level of writing. After examining a writing sample of an Arab student, Cumming (1990) noted that it reflected the characteristics of a knowledge-telling model. He elucidated that the writing strategies of that particular Arab student did not "…refine that knowledge, use it to achieve new goals, or transform his thinking" (p. 379).

The cognitive model of the three writing processes of planning, translating and reviewing, and their sub-processes as proposed by Flower and Hayes, is the basic constituent of the various models of the writing process established by many scholars and researchers in the discipline of writing instruction. These models assume that a number of macro processes—basically, planning, formulation, and revision— interact with one another in a

recursive manner while composing. Furthermore, writers are assumed to manipulate these three macro processes and their corresponding mental representations (which include those relating to content, or of a lexical, syntactic, discursive, or rhetorical nature) to achieve the desired goal.

2.4.2 Stages of the writing process

Different models underpin the consensus amongst researchers that the writing process consists in general of the following three main stages: planning, writing, and revision. Presenting or publishing is a fourth stage suggested by many researchers such as Steward and Cheung (1989) and Atkins and Curtis (1998), in view of the fact that writing is also a social act that demands an authentic audience to motivate students to write for an authentic purpose while composing (Singhal 1998; Osuna 2000; Warschauer 2000; Al-Jamhoor 2005). Each of these three main stages has been examined in empirical research conducted into the composing process of students in L2 writing classes in ESL contexts.

Planning

Manchón and Roca de Larios (2007) view the planning process as a set of guiding principles about how the writing task should be embarked upon. However, this does not essentially entail that planning should be contemplated only as a pre-task activity, but it facilitates the representation of the task and its execution in relatively inexpensive cognitive terms and provides flexibility in the choice of problem-solving strategies (Hayes and Nash 1996). This flexibility is crucial for L2 writers, who usually strive to

simultaneously exploit the appropriate vocabulary in the creation of accurate grammatical and rhetorical patterns in order to translate their ideas (Schmidt 2001; DeKeyser et al. 2002; VanPatten 2002; Robinson 2003) while their execution of writing "…entails the juggling of different sets of ideational, linguistic, and rhetorical constraints that might compete with one another for limited attentional capacity"(Manchón and Roca de Larios 2007, p.555). Empirical research findings corroborate the fact that planning has a plain influence on the composing product. Kawauchi (2005) delineated the three-fold role of planning in influencing the fluency, accuracy, and complexity of the language produced. He states that planning first:

"…eases the on-line processing load as well as reducing communicative stress to yield higher fluency. Second, planning helps learners to access their maximal level of lexical and structural knowledge, which, in turn, will enable them to use more complex language. Third, it facilitates the allocation of conscious attention to form and thus helps learners to generate more accurate language" (p.143).

Cumming (1989) differentiates between two distinct types of planning behaviour utilized by L2 expert writers: advanced and emergent planners. Advance planners devote enough time to outline their task's main points and their sub-main points in two or three hierarchical levels before they execute their composition. While writing, they are guided by their outlines in monitoring their progress, and in making the decision when to stop writing and submit the task. Emergent planners, on the other hand, enhance their written products while writing and, as an idea arises in their minds, they

immediately jot it down and then reshape their writing by adding the new item, re-arranging the paragraph by transforming sentences, deleting or adding new phrases. This is a continuous process that may lead ultimately to a modified version of the pre-writing outline, or to a completely new outline.

An examination of the recent research conducted into the L2 writing process indicates that the L2 planning process significantly correlates with the proficiency level of the ESL learners. Manchón and Roca de Larios (2007) investigated the percentage of composition time allocated for planning by Spanish ESL students. Three groups of seven students with different English proficiency levels (pre-intermediate, intermediate, and advanced) had been exposed to classroom English instruction for between 5 and 12 years. The results showed that planning occurred in the first third of the composition process and that the students engaged in emergent and advanced planning while composing. However, as their proficiency level increased, writers gradually dedicated more time to outlining their pragmatic, textual, and ideational representations before putting pen to paper, and were more capable of activating and incorporating them into the text. Sasaki (2004) investigated the compositional behaviour of three groups of Japanese ESL writers: expert writers, and more or less skilled novice writers who were university students. Her results indicated that experts and more skilled writers were capable of detailed global planning, and took longer before starting to write, than novices and less skilled writers, who spent proportionately too much of their time on the mechanics of writing and

exploiting the strategy of local planning rather than generating meaning by framing a detailed global plan achieved through making many local plans that would fulfil the task guidelines of global planning. Al-Hazmi (2007) investigated Saudi ESL students with intermediate proficiency levels, and the results showed that only 58% of the sample planned before executing their writing task. The majority of those who planned, pointed out that the planning process took place in their minds (global planning) before they started to write. The others only planned while writing (local planning).

Formulating (text generating)

The text generating process entails transforming the writer's ideas in their outlines into recognizable language structures (Manchon et al. 2007). This requires extensive effort on the part of L2 writers to employ only their ESL appropriate linguistics items (vocabulary) to express what they want to say in an accurate text, in a coherent and cohesive manner. This process of text production is the most problematic issue for most non-native English writers, and typically accounts for 60% to 80% of total composing time (Roca de Larios et al. 2008). The difficulty that ESL writers confront is the lack of English vocabulary in their knowledge store that limits their abilities "…to fill the gap between what they wanted to say and what they could express in writing" (Yang 2006, p.83).

English ESL writers deploy various lexical search strategies to overcome their vocabulary deficiency, such as the use of L1 translation, L2 backtracking, and the use of dictionaries. These strategies have been

empirically proven to be utilized by diverse populations of ESL writers while composing essays. Silva (1992) studied the different writing strategies utilized by thirteen international students with six different mother tongues, studying in an American university. Composing in both their native languages and in English as a second/foreign language was examined, as well as how these differences could affect the practices of ESL writing teachers. The results indicated that deficiencies in terms of linguistic resources among the graduate ESL writers induced them to pay more attention to L2 writing considerations (grammar, vocabulary and spelling) at the expense of text structure and style, with the latter being the main concerns reported in L1 writing which resulted in less elaborate L2 products.

Many studies (such as those of Doushaq and Al-Makhzoomy 1989; Halimah 1991; Al-Hazmi and Scholfield 2007) have examined the formulating process of Arab writers in ESL writing. It seems that Arab ESL writers focus mainly on the correctness of their writing, considering the mechanical, superficial, and manifestation elements of writing at the expense of text structure and rhetorical style. The difficulty of the L2 writing tasks and the proficiency level of the student influence the composition strategies employed while excuting their compositions. Wang and Wen (2002) inspected the use of L1 and L2 by sixteen female Chinese students when composing two writing tasks: a story narration and an argumentative topic. The results revealed that Chinese ESL writers use their L1 while constructing sentences, and use their L2 to respond to the writing task, which took two-thirds of their time. Less proficient writers relied on their L1 to compensate for their L2

vocabulary limitations while composing in both tasks, through the translation of tentative L1 formulations into L2. More proficient L2 writers used only L2 while generating their texts. Cumming (2003) emphasized that writing in a second/foreign language is a bilingual event, where both L1 and L2 are at the writers' disposal. How often learners rely on their L1 is related to their L2 proficiency, and to what extent they utilize their L1 while composing, which depends upon how difficult the writing task is.

Revision

Revision is a key component of the writing process, and may involve peers' and teachers' feedback as well as students editing their texts (Desmet et al. 2008). ESL students believe that a good written text should be free of errors as a result of the dominant view of writing as a means to practice vocabulary and grammar that has already been learned (Ferris and Hedgcock 2005; Matsuda 2006; Brown 2007). Based on this view of writing, the teachers' feedback is expected to identify writing problems and to provide suggestions which can be used to correct errors (Ferris 2004 2010). Other studies of ESL writing conducted by researchers such as Goldstein (2004) and Van Gennip et al. (2010) have found that students were eager to follow their teacher's comments closely, despite the probability of misunderstanding them. These studies also revealed that students doubted their own and peers' knowledge within the English writing area, as well as their own and their peers' skills in revising and providing feedback. This mistrust of the credibility and usefulness of their own and peer's reviewing comments is due to a lack of sufficient training and practice in reviewing during writing classes.

Inexperienced ESL students struggle in their attempts to critique their own work, and may distrust their suggestions to other students; they may also find it difficult to consider their peers' comments as being valid (Jones 2006). ESL students' feedback comments mainly address problems in writing at the local level, i.e. characteristics of grammatical structures and mechanics. Lee and Schallert (2008) indicated that the use of revision processes such as reading the text, detecting problems, selecting a strategy, and revising the text, differed between experienced and novice writers. The former transformed their texts, whereas the latter made fewer substantive revisions, mainly concentrating on low-level surface changes.

The writing process-oriented approaches' emphasis on a writer's discourse mastery tends to isolate writers and prevent them from exchanging ideas with audiences. This isolation causes writers to speculate on reader reactions to their writing (Clark 2003). Bean (2001, p.15) pinpointed one problem with the writing process-oriented approaches which view "…writing as a set of isolated skills unconnected to an authentic desire to converse with interested readers about real ideas". Kent (1999) perceived a lack of communication models in the process-oriented writing classroom. This problem has initiated a movement towards extending the writing process approach from one that operates in a sociocultural vacuum, to one involving students' social and cultural interactions with the surrounding environment. This view rejects the dominance of process at the expense of other aspects of writing and writing instruction (Matsuda 2003). This new social turn in writing instruction, resulting in the so-called post-process approaches, views

writing as a social and cultural practice that demands a dynamic dialogic interchange of ideas in authentic contexts between writers and audiences in order to share ideas, and is based on Vygotsky's sociocultural theory view of learning (Jones 2006; Vollmer 2002). The advent of technology makes the application of a communication model a possibility in writing classrooms where students interact with audiences around the globe while seated in their classes, or even at home (see Section 2.7).

2.5 Sociocultural theory

Social cultural theory (SCT) views writing as a social practice involving interaction between learners and other community members through tools (human and non-human) that mediate changes in the learner, from his current learning level to a potential learning level, achieved through scaffolding (Lantolf 2000, 2006). This section discusses the central tenets of SCT: zone of proximal development, mediation and scaffolding.

2.5.1 Zone of Proximal Development (ZPD)

The zone of proximal development (ZPD) is one of the major concepts of Vygotsky's sociocultural perspective on cognitive development, and is the most frequently investigated and cited in the educational literature (Ageyev 2003). The zone of proximal development is the "…distance between the actual developmental level as determined by independent problem-solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky 1978, p.86). So the ZPD defines a dynamic state of mental

development as the space between the learner's (whether a child or an adult) actual developmental level of independent performance and the potential developmental level of maximally assisted performance (Bodrova and Leong 1996). Shayer (2002) stated that Vygotsky was not satisfied with the assessment of a learner's intellectual abilities and the evaluation of instructional practices (actual level), but thought that the focus should be on the potential of understanding and acting (Wennergren and Ronnerman 2006). Vygotsky stressed that learners should be assessed at the latter level since, at the actual developmental level, various functions are in the embryonic state of being "buds" or "flowers". These functions mature within social interaction processes that might provide explanations and support (assistance) to enable the learner to attain a higher level of achievement with the support of his peers, and to co-construct knowledge. Once these processes are internalised, they become part of the learner's independent developmental achievement. In other words, the learnt experiences and knowledge are appropriated by the learner, or reach the stage of being "fruits" of development (Bowler et al. 2005).

What the learner can do unassisted	What the learner can do with assistance (scaffolding)	What the learner cannot yet do
Attained Competence	Zone of Proximal Development	Future Competence

Figure 2.2 The Zone of Proximal Development (Bowler, Large, Beheshti and Nesset 2005, p.4).

Mitchell and Myles interpret the ZPD as '…the domain of knowledge or skills where the learner is not yet capable of independent functioning, but can achieve the desired outcome given relevant scaffolded help' (2004, p.196). Therefore the common understanding of the ZPD as an educational model is deceptive, because Vygotsky defined it as an area of maturing psychological processes, and a construct for understanding social influence in ontogenesis (Gredler and Shields 2004). The ZPD is not a physical place situated in time and space; rather it is a metaphor for observing and understanding how interactional means are appropriated (understood and learnt) and then internalized (developed) through action (Lantolf 2006). In the ZPD, co-constructed experience (the learning stage) stimulates and brings to life an entire set of functions which are in the process of maturation and lie within the ZPD (Shayer 2002), thus paving the way for internalizing (developing) these stages in a sequence of learning in a socio-culturally convergent environment, where social (inter mental) stages develop before arriving at individually internalized (intra mental) stages. Marsh and Ketterer (2005) indicated that Vygotsky (1987) considered the ZPD, or collaboration, as "invisibly present", which may be the case with both children and adults. Presumably, such collaboration can also be conducted over the Internet and used as a reference for further work, invisible or not. Brown et al. (1993) claim that the ZPD may include people and such artefacts as books, videos, wall displays, scientific equipment, and "…a computer environment intended to support intentional learning"

(p.191). Learning is not merely conveyed, but mutually created by the participants in a structured dialogue in which the more capable partner promotes the learning of the less able by building, and progressively dismantling, a scaffold within which the learner is enabled to progress from the present to a higher level of ability (Barnard and Campbell 2005).

2.5.2 Mediation

The idea that the human mind is mediated, represents the core and the most distinctive concept of sociocultural theory as originated in the work of Lev Vygotsky (1978). SCT fundamentally asserts the seamless, interactive, and negotiated (dialectical) relationship between the cognitive (mental) and social (and cultural) domains, and rejects the dichotomising of these two domains in the learning process (Lantolf 2000, 2006). SCT makes prominent the indirect intervened (mediated) interactive nature of learning, where problem solving or setting goals is to be achieved through the use of meditational tools (Lamy and Hampel 2007). These tools include physical tools that can be as simple as paper and pencil, or as complicated as computers, and symbolic (psychological) tools such as the language that humans use (e.g. English, sign language, musical notation, Morse code). The cultural assumptions that learners bring to the event (their belief systems); the social institutions within which the event is taking place (e.g. a school, park, market, home); the software or hardware humans have at their disposal (e.g. the Internet, newspapers, the abacus); and the time structure that frames their encounter (continuous in a real time frame, interrupted in a time-delayed one), are all crucial. These different types of tools are

artefacts that humankind has generated over time to meet the needs of individuals and their social communities (Lantolf 2006). Individuals employ these artefacts to adjust and regulate their interactions with others in their surrounding social context (on the inter-psychological plane), and to help them to create learning experiences. Later these artefacts are exploited for their own purposes, incorporating and internalising this co-constructed knowledge and experience, and adding personal value, on the intra-psychological plane. Learning arises in interaction; not through interaction (Ellis 2000).

Ohta (2001) indicated that learners benefit from their interaction with both more and less proficient peers. Less proficient learners learn from their more proficient peers and "…interactions between learners of differential proficiency levels can enhance the fluency and awareness of the status of their own knowledge or understanding on the part of more proficient partners" (p. 269).

Lamy and Hampel (2007) emphasized that the SCT notion of mediational tools includes technology such as software or hardware applications (Hass 1996) that learners have at their disposal. These innovative artefacts pave the way for Computer Mediated Communication for Language Learning (CMCL) applications, where various software platforms are becoming an essential part of college courses. These applications contain a range of components such as authoring and assembly tools (HTML), synchronous and asynchronous interactive components (e-mails, chat, forum), and learning management elements that instructors can use to direct and administer the

learning process (Robson 2002). These are seen as capable of enhancing learning and instruction to provide a rich-environment that supports interaction between students to enhance their learning processes (Kreijns et al. 2003), and facilitates the construction of knowledge and learning (Pea 1994), and group cognition (Stahl 2006).

2.5.3 Scaffolding

The metaphor of scaffolding is the third main concept of the sociocultural theory of cognitive development. Vygotsky (1978) described it as the ability of the learner to independently perform tasks and activities in the future without being assisted by mentors as happens at present. Vygotsky did not employ the term (scaffolding) itself, which originated in Wood, Bruner and Ross' (1976) article about the role of tutoring in problem solving, and it has since been very widely applied as the type of assistance needed in the zone of proximal development.

Forman (2008) illustrated that scaffolding can be viewed as a teacher-driven or as a learner-driven concept. Scaffolding in the sense of teacher-driven appears in many early definitions of scaffolding, where it was perceived as an overt form of instruction by the teacher (mentor) (Wells 1999). Gibbons (1999) depicted scaffolding as the process whereby a "mentor" helps a learner to know how to do something, so that s/he will be able to do it by himself or herself in the future. Poehner and Lantolf (2005, p.259) envisaged scaffolding as it is usually understood, as assisted performance to serve as a way for the tutor (or other individuals) to compensate for any ability

required to carry out a task that the individual (or group) lacks. Van Lier (2004) views scaffolding as learner-driven, responding to his or her readiness to learn "…in the interstices between the planned and the unpredictable . . . when planned pedagogical action stops" (p. 162). The present study views scaffolding as a process which is both teacher- and learner-driven, and the concept can be expanded to includes various forms of support provided by software tools (Puntambekar and Hubscher 2005). This serves to emphasize that the notion of scaffolding can be utilized to assist learners' performance whether with their classmates, group mates, computer-supported collaborative tools, or with their instructors in order to become independent and self-regulating learners and problem solvers (Hartman 2002).

Greenfield (1999) emphasises that any form of support can be defined as a scaffolding form if it has the following five features:

The scaffold, as it is known in building construction, has five characteristics: it provides a support; it functions as a tool; it extends the range of the worker; it allows a worker to accomplish a task not otherwise possible; and it is used to selectively aid the worker where needed (p.118 cited in Puntambekar and Hubscher 2005, p.2).

Van Lier (1996) delineated six conditions that together formulate the looked-for scaffolding in language classes:

Continuity: tasks are recurring with variations, and connected to one another in a recursive style as stages of the writing process;

Contextual support: the learner's engagements and interactions are endorsed in a safe, supportive environment that upholds errors as part of attempts to access the means and goals of the tasks;

Intersubjectivity: mutual engagement, encouragement, non-threatening participation and support; two minds thinking as one.

Contingency: scaffolded assistance depends on the learner's reactions; elements can be added, changed, deleted, repeated, etc.; task procedures depend on the actions of the learner; contributions are oriented towards each other.

Handover/takeover: an increasing role for the learner as skills and confidence grow. In Winnips' work (2001), the handover (he calls it fading) is built into the design of computer-based learning materials. The design involves the gradual withdrawal of support, and hence fits within the scaffolding metaphor. In Van lier's work, the notion of takeover is added to indicate the dynamic, collaborative and dialogical nature of the process, and to emphasize learner agency and autonomy.

Flow: skills and challenges are in balance, participants are focused on the task in natural interaction (communication) (van Lier 2004, pp. 150-152).

Bransford, Brown and Cocking (2000), pointed out that some instructors prefer to apply an apprenticeship model, whereby an expert (teacher) models an activity, provides advice and examples, and gradually moves from one stage to another in practice, before giving students the chance to take over. Support is then gradually decreased, and fades as the student comes to

independently perform the task. On the other hand, other instructors choose to employ methods with the ongoing use of tools. Computer-supported collaborative learning facilitates communication with peers to help them solve problems, and students then become more self-reliant (Banaszynski 2000). Scaffolding practice in general leads to better student direction; reduced uncertainty, surprise, and disappointment, increased efficiency, and palpable momentum (McKenzie 1999).

2.5.4 Sociocultural theory and e-portfolio

The sociocultural theory provides the theoretical framework for using e-portfolios to mediate and support (scaffold) ESL student writing development within a web-based learning environment. E-portfolios act as a mediating tool (a symbolic tool) for learners to enhance their ability to work in their social and physical context (inside and outside the classroom), access portfolio resources (text, audio, podcasts, images, video, and hyperlinks) and use synchronous and asynchronous tools to interact with others (teacher, peers and external reviewers) effectively. E-portfolios also function as scaffolding. E-portfolio features support learners in their attempts to achieve competency while working through their ZPD stage. The pop-up hints associated with the use of the portfolio resources during the process writing stages, provide support to students with regard to planning, drafting and revising their writing tasks. E-portfolio collaboration features enable them to work in small peer groups of their selecting, to share their work, negotiate meaning, send and receive feedback and compare their writing with that of their peers. External reviewers (parents, friends, old teachers) can comment

on their work if invited. E-portfolios enable the use of anonymous posting to help reduce anxiety and raise self-confidence. E-portfolio publishing features offer learners a valuable chance to interact with a real authentic audience outside the classroom, to review and comment on their writing.

2.6 Writing motivational constructs

A surge of studies on student motivation and attitudes (e.g. Gardner and Lambert 1972; Gardner 1985; Crookes and Schmidt 1991; Dornyei 1994; Ellis 1994; Warschauer 1996; Anderman et al. 1999; Dornyei 2001; Dornyei et al. 2006 and Norris-Holt 2001) has affirmed the influential relationship of these two key variables on the enrichment of second or foreign language learning situations. However, there is an ongoing confusion about the interchangeable use of these terms due in part to the broad umbrella term and abstract concept of motivation (Dornyei 2001; Boscolo and Hidi 2007). This ambiguity requires clear definitions of the two main notions of attitude and motivation, and a thorough discussion of their influence on students writing in English as a Second Language.

2.6.1 Attitude

Oppenheim (1966, p.105) defined an attitude as a "…state of readiness, a tendency to act or react in a certain manner when confronted with certain stimuli". An attitude refers to a personal feeling or belief that influences a person's tendency to act in a particular way (Moallem 1999). It concerns an individual's temperament, leading to positive or negative responses to an

object, person, institution or event (Ajzen 2005). Sjöholm (2004, p.687) adds that attitudes can be defined as "…evaluative self descriptions or self-perceptions of the activity of learning languages". Attitudes affect the choices that one makes, and are essentially comprised of affective and cognitive components. The affective component is basically an emotional perception of something. The cognitive component is comprised of knowledge, opinions and beliefs. While an attitude is originally formed in the context of the affective and cognitive components, it can be influenced by behaviour related to the given attitude (Kimble & Gannezy 1963; cited in Shih 1989). In this study, the term 'attitude' mainly refers to students' feelings and beliefs concerning the integration of computer-mediated communication technology (electronic portfolio) in English writing courses.

Students' attitudes toward using technology in English ESL classes have received considerable attention from researchers. Al-Jamhoor (2005) investigated the university undergraduate-level Arab ESL students' attitudes towards online collaborative writing in four universities in Saudi Arabia, Egypt, and the United States. Participants were taking advanced English writing courses with American peers and tutors, and the findings revealed that Arab ESL students had a strong positive attitude towards the online-based writing project. They agreed that its tasks motivated them to write and read more habitually than did the traditional approach. Another empirical study conducted by Chang (2007) investigated the effect of using an internet-based application (weblog) on learners' attitudes towards writing in English as an ESL in two universities in Taiwan, and on their informal

use of the English language. The results revealed that the use of weblogs positively influenced the learners' attitudes towards writing in English, and encouraged their reflectivity, collaboration and participation in ESL writing. These findings corroborate those a number of recent studies (e.g. Jawahar and Elango 2001; Durndel et al. 2002; Liaw 2002; Al-Ahmad 2003; Garland and Noyes 2004; Cheung and Chen 2005; Masiello et al. 2005; Smith and Oosthuizen 2005; Roussos 2007) which endorse the significance of using computer assisted language learning applications in creating a positive attitude towards using computers and web-based applications in writing classes. These studies also emphasize the learners' computer experience as being only a limited predictor of positive attitudes toward using technology in writing tasks.

2.6.2 Motivation

Despite the wide use of the term 'motivation' in the interdisciplinary fields of the social sciences, there is no general consensus on its definition or constituents of the concept. Gardner (1985, p.10) defined it as a

"…combination of effort plus desire to achieve the goal of learning the language. That is, motivation to learn a second language is seen as referring to the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity".

Pintrich and Schink (1996) viewed motivation as a process of initiating goal-directed activity which is instigated and sustained. Cheng and Dornyei (2007, p.146) describe it as "…a general way of referring to antecedents (i.e.

the causes and origins) of action". Most researchers would agree that motivation concerns the direction and magnitude of human behaviour; in other words, how people make decisions to do something, how long they are willing to keep doing it, and how committed they are while doing it.

It is essential to emphasize that the various theories of motivation with regard to second or foreign language instruction have been mainly shaped in respect of the teaching of the language as a school subject, for instance in studying French in the Canadian English speaking provinces of Ontario and Calgary (Grader 1985; Masgoret et al. 2004) or English in Hungary (Dornyei et al. 2006), but not in the teaching of the language as a tool for students to engage and interact with peers in and outside school. This situational orientation toward foreign language learning, according to Cumming et al. (2007, p.94), "…has produced theories of motivation about language learning that focus on issues such as willingness-to-communicate, language anxiety, or distinctions between instrumental and integrative orientations to language learning issues".

These studies are theoretically framed using psychologically-based theories that categorize motives into two broad categories: integrative or instrumental. However, these are too general and ill-defined for practical purposes (Au 1988; Skehan 1989; Crookes and Schmidt 1991; Oxford and Shearin 1994) and are not based on educational theory (Crookes and Schmidt 1991) which would provide instructors with more guidance. Therefore, the current categorization is simply not pragmatic enough (Dornyei 1994). Furthermore, most studies of ESL motivation were

conducted with reference to spoken, rather than written communication, and present only partial explanations of student motivation.

Bruning and Horn (2000) examined the key issues affecting the development of the motivation to write, and claimed there was a need to enhance student beliefs in, and confidence about, the nature and potential of the writing process. This would include both the sense of one's writing's power, and its value as an intellectual and social tool and for the development of a more realistic understanding of the difficulty in developing self-confidence on the part of the learner with regard to their writing abilities. Also, authentic writing task goals and purposes in real audience contexts are likely to provide motivational support, and to help students develop a sense of their own writing voice. Thirdly, students need to develop the practice of employing various techniques or strategies in different situations when writing about complex topics, including defining goals, outlining main points, drafting, and interpreting feedback in order to achieve writing task goals. Boscolo and Hidi (2007) indicated that motivational constructs can be divided into the three main areas for the purpose of research into the motivation to write. The first area is that of self-beliefs (self-efficacy and self-concept); the second is that of motives to act (interest in writing and writing's perceived value); and the third area is the self-regulation of writing.

2.6.3 Interest

A student's interest in writing may be an individual interest that develops slowly over time to have long-lasting effects on a person's knowledge and values, or it can be situational which is "…evoked more suddenly by something in the environment' (Hidi 1990, p.551). This has been empirically investigated by many researchers (e.g. Hidi and McLaren 1991; Albin, Benton and Khramstova 1996; Renninger and Hidi 2002; Hidi and Renninger 2006; Lipstein and Renninger 2007) and the results generally reflect the strong influence of students' interest on the quality of their writing.

Albin, Benton and Khramstova (1996) investigated differences in student interest and writing performance. Students were asked to write two essays about American soccer (low interest) and baseball (high interest). The results illustrated that writing about the high interest topic led to the production of a greater number of pertinent ideas, a clearer organization of their ideas, and a greater use of topic knowledge in planning (Albin et al. 1996) in comparison with writing about the low interest topic.

Lipstein and Renninger (2007) used Hidi and Renninger's (2006) model of interest development to examine the influence of students' interest in writing, on their conceptual competence, goals and strategies, perceptions of their effort, self-efficacy, and feedback preferences in their writing, and the conditions that support students in becoming effective writers (Lipstein and Renninger 2007). The results indicated that students' progress through

stages wherein they refine their understanding of the nature and purpose of writing, experience writing as being less effortful, "…experience increased self-efficacy about writing", and "…seek feedback that makes connections to ideas and form" (Lipstein and Renninger 2007, p.140).

2.6.4 Writing perceived value

Wigfield and Eccles (2000) perceived the learners' Writing Perceived Value in terms of the prominence of the task, its fundamental (intrinsic) value, the satisfaction value of the task, the value of the task in terms of its usefulness, the achievement value of the task, and the effort that the learner will exert. Researchers such as Bong (2001), Cocks and Watt (2004), and Hawthorne (2008) investigated the link between learners' perceived value of writing and their achievement levels. They results of these studies indicated a statistically significant relationship between learners' Writing Perceived Value and their English writing achievement (Bong 2001; Cocks and Watt 2004). The results also indicated a significant correlation between learners' Writing Perceived Value and their English writing self-efficacy (Hawthorne 2008). The researchers indicated that learners' Writing in English Perceived Values are key indicators in predicating their writing self-regulation.

2.6.5 Self-concept

Self-Concept is one's perception of one's knowledge and worth that has been formed through experience with, and interpretations of, one's environment (Marsh and O'Mara 2008). Self-concept is essential as an outcome and as a mediating variable that influences learners' attainments and other related

outcomes. Therefore, researchers have proposed three different models of self-concept to explain its relation with learners' achievements. The self-enhancement model proposes that learners' achievement is caused by the learners' self-concept variable, while the skill-development models propose that achievement causes academic self-concept. The linear relationship between learners' academic achievement and their self-concept in these two models contradicts the growing acceptance of the reciprocal-effects model that conceives of the association between learners' academic achievement and their self-concept as more dynamic and reciprocal (Marsh and Craven 2006). Recent studies (Marsh and Craven 2006; Marsh and O'Mara 2008) have pointed to the paramount role of self-concept in explaining learners' beliefs at the domain level, such as judgements of self-worth "Overall, I am a good English writer". Self-efficacy predicates learners' academic performance in specific skills, for example "I use a wide range of academic and general vocabulary in my writing".

2.6.6 Self-efficacy

Pajares and Vialante (2006) regarded student self-efficacy as his or her confidence in his or her overall ability to write. This notion is maintained in Schunk and Pajares' (2002) explanation of self-efficacy as a judgement which is attributable to the learner's creation of his own ideas, as a cumulative result of his or her actual performances, observational experiences, forms of persuasion, and physiological reactions to the surrounding environment. Bandura (1986) defines self-efficacy as "…people's judgments of their

capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391).

Self-efficacy measures includes Bottomley, Henk and Melnick's (1998) Writer Self-Perception Scale, which mainly reflects the student's ability to use the writing process to execute their writing tasks, confidence in using particular writing skills such as planning and generating ideas, composition, organization, language use and mechanics (spelling, punctuation),and, self-confidence in achieving a certain level or grade for a writing task as compared to the grade eventually awarded (Pajares and Vialante 2006).

The results of various studies (e.g. Shell et al. 1989; Pajares and Johnson 1994 1996; Zimmerman and Bandura 1994; Klassen 2002; Pajares 2003; Pajares and Vialante 2006) which have been conducted into students' self-efficacy and their writing performance, have consistently pointed to a positive correlation between writing self-efficacy beliefs and writing performance.

2.6.7 Self-regulation

The self-regulation of writing demands that students use their storage of knowledge about learning strategies developed over the years, concerning setting goals, gathering information, planning, composing, organizing and revising, while completing each of their writing assignments (Pajares and Vialante 2006). Hammann, (2005, p.3) maintained that students who are "…taught effective writing strategies will be able to attribute their writing difficulties to inappropriate strategy use rather than the lack of the gift of

writing ability. On the other hand, it may be that students who believe that they are poor writers may not put forth the effort to learn and apply writing strategies, even when provided with appropriate instruction and support".

2.7 Writing and CALL

The development of Computer Assisted Language Learning (CALL) technology accords with movements in theories of second language acquisition (Bax 2003; Simpson 2005; Warschauer and Healey 1998). During the 1960s and 1970s, behaviourist theory viewed language acquisition as a habit formation attained through the extensive repetition of drills and practice, until the learner had mastered the language. The focus here is on accuracy, and therefore the CALL materials developed in that period were closed computer-based mimic drills, where two answers options were presented for learners to choose from (Fotos and Browne 2004). The movement in the language acquisition field in the late 1970s shifted the focus from the accurate use of language to fluency. This was supported by the dominance of the communicative approach based on cognitive theory which views learning as resulting from "…inferences, expectations and making connections. Instead of acquiring habits, learners acquire plans and strategies, and prior knowledge is important" (Hartley 1998, p.18). Cognitivism emphasises that materials should be organised effectively in ways that help learners to make connections, retrieve and process information (Lopes 2008). CALL corresponds to communicative theories of language using various computer programs that enhance the learners'

process of discovering patterns of language and meaning, and encourage discussion and interaction between learners, for example by using text reconstructions programmes.

The 1990s witnessed two innovations that shaped the advent of information technology and, accordingly, communicative CALL applications in the language acquisition field. The first was the use of learning management systems (LMS) in higher education institutes around the world to manage learning-related materials and student-learning processes (Malikowski 2008). LMS is a comprehensive content-centred set of tools used within the institution network to support learning based on the cognitive psychological perspectives that "…dominated pedagogical frameworks and models for designing technology-mediated teaching and learning environments" (Hill et al. 2009, p.103). These tools can be classified into three sets: static, statistical and interactive (Collis and Boer 2004; Malikowski et al. 2007; Lopez 2008). The first two sets of tools are mainly used by language teachers to transmit information to students (static) through posting syllabi, handouts, reading material and assignments. Statistical tools enable the teacher to monitor students' access to course materials, quizzes and their interactions with each other in the discussion section. Interactive tools allow students to interact with the computer through quizzes and questionnaires and to communicate synchronously or asynchronously with their colleagues through discussion boards. These tools aim to "…automate time-consuming faculty tasks … [and make] professors more efficient and enable greater student learning" (Garrett et al. 2009, p.197).

The second development was the revolution in the number of Internet users and providers, and the introduction of applications which have continuously grown to make the Internet the main conduit for information. This has altered traditional computer-assisted language learning with a move from language learning software and CD-ROMs to web-based applications (Fotos and Browne 2004; Chang 2007; Hill et al. 2009).

During the mid-1990s, a new movement criticising the cognitive psychological perspective led to the development of the communicative approach to language learning, shifting the focus of language learning instruction to "…a more social or socio-cognitive view, which placed greater emphasis on language use in authentic social contexts" (Warschauer and Healey 1998, p.58). Warschauer and Healey (1998) expected that social learning theories would replace the cognitive perspective and shape the framework for 21st Century using integrated CALL software. Fotos and Browne (2004, p.4) stated that "Much of the theory underlying integrative CALL is derived from the Vygotskyan sociocultural model of language learning in which interaction is regarded as essential for the creation of meaning".

A recent survey of LMS indicated that, despite the various kinds of LMS used in universities and language learning programmes around the world, the BlackBoard learning management systems is used in more than 51 per cent of academic institutes (Instructional Technology Council 2010). These various LMS rely on almost the same philosophical principles of content importance, and the same features and applications (Garret et al. 2009) that

hinder the interaction upon which the language development process is based, and thus obstruct the establishment of authentic communication (Brine and Franken 2006).

Therefore, current LMS are not ideal, given the growing demand for 21st Century integrative CALL software that promotes the learners' authorship and ownership of their work, facilitates interactions with peers, teachers and external audiences outside the classroom, and emphasizes ease of use. To achieve this, LMS should enable learners to author their own web spaces, and organize them in ways that meet their own learning goals through the use of different file formats and hyperlinks.

That is, learners should be the authors of their web spaces and should be able to organize them in ways that meet their own learning goals through the use of different file formats and hyperlinks. The new view of the learners' centrality in the learning paradigm entails adopting social networking interaction applications that encourage the active involvement of the learner in an array of learning activities and technological interaction patterns (Bannan-Ritland 2002). Hirumi (2009) divided learners' interaction patterns into human-to-human and human-to-non human interactions. Human-to-human interactions encompass learner-self interaction, learner-instructor interaction, and learner-peer interaction, while human-to-non human interactions include learner-interface and learner-content interactions.

2.7.1 21ST Century integrated CALL software

Researchers have examined new web-based applications such as wikis, blogs, RSS, and electronic portfolios which may satisfy the emerging integrative CALL view of the language learning process, by which the learner is at the epicentre (Jafari et al. 2006). Web-based application software is sought that empowers students to actively define their learning goals, and to develop their language proficiency at their own pace throughout the stages of the learning process. In other words, researchers are looking for new tools that encourage learner ownership of the learning process and which equip them with the technology to include various multimedia components so as to allow learners to collect and organize artefacts in many formats, with multiple presentations of the same evidence of learning achievement which learners can reflect on (Stefani et al. 2009).

2.7.2 Electronic portfolios

The new web-based technology should not only record the students' attainments, but also present an authentic temporal and structural record of their efforts, development and growth in their life-long learning in one field or more (Barrett 2009; Meyer et al. 2010). Researchers are not, however, looking for an electronic version of paper-portfolios working as multimedia containers. Building on the already acknowledged effectiveness of portfolio pedagogy, electronic portfolios can deepen learners' learning experiences by placing them at the centre of a more engaging, dynamic and accessible

personal learning process which can scaffold essential learning and metacognitive skills (Meyer et al. 2010).

Barratt (2005) perceives the electronic portfolio as an application that allows the learner to collect and organize various artefacts and formats into a single digital repository presenting "…authentic and diverse evidence, drawn from a larger archive representing what a person or organization has learned over time on which the person or organization has reflected, and designed for presentation to one or more audiences for a particular rhetorical purpose" (p.15). MacDonald and his colleagues indicated that electronic portfolios are "…multimedia environments that display artefacts and reflections documenting professional growth and competencies" (2004, p.52). Sutherland and Powell (2007) described an electronic portfolio as "…a purposeful aggregation of digital items – ideas, evidence, reflections, feedback etc, which 'presents' a selected audience with evidence of a person's learning and/or ability".

Electronic portfolios are created in terms of different perspectives according to individual needs. According to Bauer and Baumgartner (2011), there are three main types: showcase, assessment and learning portfolios. Showcase portfolios are mostly used to show achievements and rewards, while the assessment portfolio is used for evaluation purposes. Academic efforts and progress over a period of time in one or more areas are presented in the learning process portfolio. The latter type is the focus of this study.

Zubizarreta (2009) perceives this type of e-portfolio as a meaningful record of learning, growth, and change in the learner's abilities, that allows teachers, parents, educational administrators and members of the community to identify what the learner has learned, or what learner is able to execute.

Various factors should be borne in mind to achieve the successful implementation of a web-based portfolio. These include the academic context and the selection of software that conforms to social learning constructs in the web-based learning environment. Gathercoal and his co-authors (2002) defined twelve critical factors categorized into four groups. The support group involves the institution's administrative and financial support through integrating the e-portfolio into course requirements and providing sustainable Internet infrastructure in terms of Internet clusters, internet access, and IT helpdesks. The design group includes the appropriate course standards and faculty and student rules, and factors concerning practical implementation milestones and periodic reviews of the programmes. The commitment group involves the students' agreement to complete the portfolio requirements as a weighted part of his course grade, while staff should provide detailed information about the course content, assignments, resources and assessment criteria. Teachers also have to provide continuous feedback to students and encourage them to develop their course content and interaction through discussions with teachers, peers, parents and mentors. The training group encompasses onsite training sessions for the teaching staff, the online video recording of training, and Q&A sections using the software.

Three groups of factors influence the selection of software that adopts the social learning perspective (Hill et al. 2009). The first group involves synchronous and asynchronous tools representing the contextual factors of interaction, that enable the various types of interaction. Small class sizes and sufficient available resources help learners interact to learn at their own pace. Culture and community factors form the second group of factors that the software needs to be suitable for use as a web-based learning environment. The software should have tools that enable different types of interaction formats that suit learners from different backgrounds. The software should also enable the creation of small collaborative groups as part of the learning process, to satisfy group needs. The characteristics of learners then prompt the need for tools that enhance their learning beliefs, introduces them to new learning strategies, and improves their self-efficacy and motivation through involvement in authentic learning activities. Further details of these factors are given in Table 2.1.

Table 2.1 Application of social learning constructs in WBLEs (Hill et al. 2009, p.90)

Construct		Application in WBLEs
Context	Interactions	Provides opportunities for creating and sharing in-depth messages Enables support by more knowledgeable others

		Encourages interaction by the instructor and peers
	Group and class size	Monitors group size to enable support from more knowledgeable peers
		Monitors class size to enable consistent and engaged interaction
	Resources	Encourages effective use of postings and other resources
		Provides strategies to identify, interpret, and utilize resources
Culture and Community	Culture	Facilitates online interactions so they meet the needs of learners from a variety of cultures
		Provides multiple formats for communication to meet differing cultural needs
	Community	Facilitates connection-building in small and large groups
		Supports collaborative activities
Learner Characteristics	Epistemological beliefs	Takes into consideration reflective thinking abilities
		Gains an understanding of epistemological

		beliefs of students to guide design
	Individual learning styles	Gains an understanding of learning styles to guide design
		Enables different levels of interaction to accommodate individual learning styles
	Self-efficacy	Enables choice in interactions to minimize social anxiety
		Promotes self-regulated learning
	Motivation	Incorporates authentic activities
		Sends messages regularly to motivate learners

The selection of electronic portfolio software should be based on its flexibility for the goals set for the project, rather than technical issues (Love and Cooper 2004; Hall et al. 2005). Butler (2006) and Jafari (2004) outline the key features of a successful electronic portfolio medium: ease of use or user-friendliness; technical support that includes the additions of new features, system updates, maintenance and technical helpdesks; system portability and security; interoperability; user accessibility and privacy; and system tools for data analysis and to generate reports.

2.7.3 Selecting the e-portfolio software

The pertinent literature for implementing e-portfolios in higher education and recent projects in Europe (e.g. Baumgartner 2009; JISC 2009; Sweat-Guy and Buzzetto-More 2007), and in North America (e.g. Jafari 2006; Barrett 2009; Abrami 2009) has been consulted in order to establish guidelines and make recommendations for using e-portfolios in the classroom. A list of eight e-portfolio software programs is shown in Table 2.2, all of which are suitable for the social learning paradigm, medium features and academic context.

Table 2.2 Shortlisted E-portfolio software

E-portfolio Software	provider	Type	License
Blackboard portfolio	Blackboard	LMS with E-Portfolio functions	Commercial with all-inclusive offer
Epsilen	BehNeem LLC	LMS with E-Portfolio functions	Commercial with all-inclusive offer / with licenses per user
Factline	Factline Webservices GmbH	Integrated systems	Commercial with all-inclusive offer
Fronter	Fronter International	LMS with E Portfolio functions & Integrated systems	Commercial with licenses per user

Mahara	eCDF New Zealand	E-Portfolio Management- Software	Open Source
PebblePad	Pebble Learning Ltd	E-Portfolio Management- Software	Commercial with all-inclusive offer / with licenses per user
Sakai	The Sakai Foundation	LMS with E-Portfolio functions & Integrated systems	Open Source
TaskStream	TaskStream Inc.	E-Portfolio Management- Software & Integrated systems	Commercial with all-inclusive offer / with licenses per user

The e-portfolio shortlist programmes have been evaluated using Himpsl and Baumgartner's (2010) five criteria (see Appendix A). These are:

1) Collecting, organising, selecting

2) Reflecting, testing, verifying and planning

3) Representing and publishing

4) Administrating, implementing, adapting

5) Usability

Table 2.3 Comparison of e-portfolio software

E-portfolio Software	selecting, organising,	Collecting, planning	verifying and	Reflecting, testing, publishing	Representing and adapting	implementing, Administrating,	Usability
Blackboard portfolio	★★	★★		★	★★		★★
Epsilen	★	★★		★	★		★
Factline	★★★	★		★★★	★		★
Fronter	★★★	★★		★	★★		★
Mahara	★★	★★		★★	★★		★★
PebblePad	★★★	★★		★★★	★★		★★
Sakai	★★	★		★★★	★★★		★★
TaskStream	★★	★★★		★★★	★★		★★★

where:

★ Recommendable with some reservations

★★ Recommendable

★★★ Highly Recommendable

The criteria for evaluating the e-portfolio software identified in Table 4 indicate that PebblePad, Mahara and Taskstream represent the highest-quality software. Mahara e-portolio software was eliminated since it has to be set up on the institute's server and provide technical support for users and software maintenance and upgrades. PeddlePad and TaskStream have almost the same features except for the learner's storage space. PeddlePad provides storage space of 250Mb for each user, while TaskStream provides twice as much (500MB), enabling learners to upload their work without the need to delete previous content. Taskstream was chosen for this and other reasons that will be explained in the next section.

TaskStream e-portfolio

The TaskStream e-portfolio set of learning achievement tools (LAT) consists of a number of web-based software applications for documenting, assessing, and improving student performance. The LAT include such tools as Web Folio Builder, Unit and Lesson Plan Builders, Discussion Board, and Message Centre (Abramovich and Brouwer 2008). The TaskStream e-portfolio software has been designed to support the professional development of teachers' preparation programmes in colleges of education by meeting the needs of learners in managing their professional development process (Sherman and Byers 2011).

TaskStream e-portfolio tools

TaskStream's set of e-portfolio tools can be classified into two main groups according to their users. The first set of tools is used by course coordinators

and teachers and involves administration and assessment tools. The second group is used by the learner and consists of four sets of tools for instruction, communication, collaboration, and publication. The administration and assessment tools are beyond the scope of this study, and will not be discussed further.

Instruction tools

This set of tools is designed for pre-service teachers at colleges of education in the USA, where TaskStream is mostly used (Barrett 2009). The instructional section provides students with a productive pack of tools allowing students to create and edit, and share lessons, units and rubrics. The students can use the unit builder to create their own learning units where they can define their own learning aims, create and edit materials, add course learning materials related to the unit subject, and add new resource links. The Rubric Wizard enables the students to create their own criteria to evaluate their own learning goals and current proficiency levels. The tool can be easily copied and edited.

Communication tools

TaskStream's communication tools include Messenger Centre (e-mail), Instant Messenger, Discussion Board, Calendar, and an Announcements area. These tools are designed to encourage interaction between students and teachers. The Message Centre is an internal e-mail system that enables asynchronous communication between TaskStream subscribers who can exchange messages and work such as rubrics, folio materials and handouts.

TaskStream provides a tool for synchronous communication between users in the form of Instant Messenger, so that users can interact in real time.

The Discussion Board supports students' online interactions, both synchronously and asynchronously. Students automatically join the discussion board as they log-in to their TaskStream accounts, and are able to post new topics or comments, or share their points of view on the posted topics. The discussion board supports the posting of audio, images, video, and HTML text formats. The Calendar permits students to plan, organize, and record their events online. Students can edit, delete or add new events to their calendar and control their calendar view formats (daily, weekly, or monthly) to enhance their course event screening. The Announcements area is where students view announcements posted to their learning course by course instructors and administrators.

Collaboration tools

The collaborative features of TaskStream enable participants to form small groups of their choice, to share and review their work. The students act as authors creating work including assignments, web links, syllabi and agendas, and they can use the feedback request feature to initiate the review of shared work among their group members. Authors can add external reviews from the world outside their classroom. Reviewers' online comments on the shared work can initiate interactive dialogue that contributes to the collaborative environment during the revision process.

Publication tools

Web publishing tools facilitate the learners' creation of webpages and folios. Learners can easily select from a wide range of templates and then customize the layout and colours according to their preferences, or they can construct webpages and folios from scratch. Learners can also duplicate previous work to use in different folios and can add, edit, or rearrange work components and delete any part to attain their goals. The publishing tools facilitate the creation of resource folios, where learners can create webpages and upload files in various formats. Student webpages and folios can be published on TaskStream's internal server, or on the Internet to allow a larger audience to view the work.

2.8 Relevant research into E-portfolios

Unfortunately, research into the impact of e-portfolios on the learning process, achievements and related motivational constructs is sparse (Wade et al. 2006). Only a very limited number of studies have examined the use of electronic portfolios in writing courses. Five studies have investigated the implementation of digital portfolios in enhancing literacy skills among English native speakers in a university first-year composition programme (Desmet, Griffin, Miller, Balthazor and Cummings 2009) and at various public school levels (Acker and Halasek 2008; Meyer, Abrami, Wade, Alsan and Deault 2010) as well as to improve the English language writing proficiency level of English as a Foreign Language students (Hiradhar and Gary 2008; Valdes 2010).

2.8.1 Studies in English in an L1 Writing Context

Acker and Halasek (2008) developed an e-portfolio project that aimed to improve the writing skills of high school graduates to fulfil the demands of university-level writing requirements. The authors recruited their project team from Ohio State University staff in the departments of English and Communications, with English teachers from the state's public schools and supported by a technological team. The project used Sakai open-source software as the electronic portfolio learning platform. The teams also created an English Language resource to help authors perform their writing tasks. Forty-one high school students agreed to take part in the study as authors, writing an essay of three to five pages and submitting it through the e-portfolio system, and then receiving feedback from university English department staff and a high school teacher acting as an eReader. eReaders acted as reviewers for the students' first essay drafts, providing formative assessment and detailed feedback, and then as evaluators of the final draft when a summative assessment was given. Students' first and final drafts were assessed using a five-point Likert scale adapted from the Northwest Regional Educational Laboratory, and data were compared using t-test statistics. Students' writing self-assessments and eReader feedback were collected, ordered and coded. The results indicated improvements in the global elements of the students' writing product (content, organization) as well as local elements (conventions). Students revealed that the eReaders' feedback helped them to revise their writing and improve its quality.

Desmet and his colleagues (2009) at the University of Georgia investigated the impact of using an EMMA e-portfolio in a first year composition programme. The EMMA interface was designed to be similar to a word processor, where students uploaded their essays to a database, where each document was automatically marked with its uploading time. Rewriting over previous drafts was not allowed. Each e-portfolio in the EMMA system had to contain a reflective introduction, had to exhibit the writer's composing/revision and peer review processes, and have a personalized wild card exhibit. It also had to demonstrate audience awareness and collaboration, including evidence of peer review and double instructor ratings (Desmet et al. 2009). The study investigated whether or not using EMMA in the revision process improved the students' final drafts and how students at different writing proficiency levels described their revision processes with regard to the written essays. During the 2005 autumn semester, the work of 450 students (both their first and final drafts) was selected to be assessed by trained raters using a 6-point scale developed for the programme. The top five students whose scores increased after revision, and the five students' essays whose scores decreased the most were selected for more detailed analysis, to try and establish the impact of using an EMMA e-portfolio on first year composition. The findings indicated that almost half (46%) of the students' final drafts essay scores improved by one point, and 26% declined by one point after using EMMA in revision. The remaining students' scores did not change after revision. The analysis of twenty essays revealed that both students scoring high and low marks made

more changes to local elements such as breaking paragraphs and conventions, than to global elements to make their writing meaningful.

Researchers from Concordia University's Centre for the Study of Learning and Performance developed a bilingual web-based, learner-centred electronic portfolio (ePEARL) based on Zimmerman's (2000) model of self-regulation to enhance learners' literacy and metacognition skills and learner self-regulation (Meyer et al. 2010). The study aimed to find out if using ePEARL would improve learners' literacy achievements and their learning self-regulation skills, and also to investigate the role of social context in enhancing self-regulation learning skills. Fourteen teachers and 296 students from grades 4-6 formed the control (7 classes and 175 participants) and experimental (7 classes and 121 participants) groups. The study was conducted in English Language instruction schools in the three Canadian provinces of Quebec, Manitoba and Alberta for the whole of the 2007-2008 school year. The researchers developed two questionnaires (one for teachers and the other for students), and analysed 133 student e-portfolios, using a rubric to assess literacy and self-regulated learning skills, and also collected the participants' Canadian Achievement test results in the fall of 2007 and the spring of 2008. An implementation assessment protocol was used to assess the implementation of the e-portfolio in the participating classes. Teachers' and students' questionnaires and students' achievement test data were analysed using SPSS. The findings indicated that students from classes rated at medium or high levels using the e-portfolio, showed improvements in their literacy skills and described positive changes in their self-regulated

learning skills. Teachers reported that consistent use of the e-portfolio enhanced their consistent use of strategies in their teaching of writing.

2.8.2 Studies in English in an L2 Writing Context

Valdes' (2010) case study project investigated students' posting of their written essays on different social networking providers "…as a means to create digital portfolios" (p.150). The study aimed to encourage students to document their writing level development and interaction with authentic audiences. Forty-three first year students majoring in Biology and Accountancy with excellent English Language writing and speaking skills enrolled in an academic reading and writing course that adopted the writing process approach during the academic year 2009-2010 in a Philippino university. Students' e-portfolios, face to face and online interviews, and reflection papers, were the sources of the data collected. The results indicated that students were able to document their writing growth and changes to their writing features, and become more aware of their writing styles and the needs of their authentic audiences while preparing their essays. The study nevertheless revealed some participants' resistance to creating e-portfolios since only their paper portfolio would be assessed.

Hiradhar and Gary's (2008) study of the social networking habits of EFL students at a university in Hong Kong was the first stage of a three stage study of the implementation of the e-portfolio system in the English Language Education and Assessment Centre (ELEAC) enhancement courses

at Linguan University. The study aimed to identify the EFL learners' social networking habits, to check their readiness to use e-portfolios in their academic courses, and their reactions to the introduction of an e-portfolio in two English Language enhancement courses. 151 students registered at two English language courses at the ELEAC during the second term of 2007-2008 completed an online questionnaire. The results revealed that the students were generally competent in basic internet skills and were active users of various social networking sites, most with at least two accounts. The study also revealed that almost half of the sample population was aware of electronic portfolios and how to create them. Eighty per cent supported the suggestion that the university should integrate e-portfolio technology into their English courses. However, only half of the students thought that using e-portfolios would show progress in their English language academic work, while the other half were doubtful about the benefits of e-portfolios. No further information about the second and third stages of implementing electronic portfolios in the English language courses at ELEAC is available.

The five studies cited above that adopted e-portfolios in writing instruction contexts used English as the first language (in the three studies of Acker and Halasek 2008; Desmet et al. 2009 and Meyer et al. 2010) or as the second language (in the studies of Hiradhar and Gary 2008 and Valdes 2010). The studies varied in terms of the theoretical framework used to identify e-portfolio characteristics, research design, sample size, the data analysis process and the statistical tests used. The ePEARL study by Meyer and his colleagues in Canada (2010) and the EMMA study at Georgia University

(Desmet et al. 2009) were based on a theoretical framework that defined the use of the e-portfolio as an assessment tool and the requirements of e-portfolio sections to fit the assessment criteria adopted at Georgia University. ePEARL is based on Zimmerman's (2000) model of self-regulation to enhance learner literacy, metacognition skills and self-regulation. The authors of the other three studies failed to indicate the theoretical framework used in their work. Meyer et al. (2010) used a two-group non-equivalent pre-test/post-test design, while the other studies used one-group designs with different sample sizes ranging from 43 to 500 participants. None of the studies recruited multi-background populations. The two studies in English as a second/Foreign Language context used available social networking providers as the e-portfolio software without any consideration as to differences in the features for communication and interaction from one system to another. These shortcomings all threaten the validity and credibility of the reported findings of these studies. Writing motivational constructs were not discussed in four of the studies, and self-regulation was only discussed in the ePEARL e-portfolio study.

The paucity of literature about the use of e-portfolios in English writing contexts reveals the need for more research in the ESL context that investigates the impact of the e-portfolio as a 21st Century integrated CALL software in writing courses on learners' writing process consistency, motivational constructs and performance. This is, therefore, the focus of this study.

Chapter 3: Research methodology

3.1 Overview

This chapter describes the methodology and procedures used to collect and analyse the data. It provides an overview of the research focus, design, study setting and participants, teacher and researcher roles in Sections 3.1 to 3.6. The selected methodology and the mixed method instruments to collect data are explained in Section 3.7. Data collection and coding are discussed in Sections 3.8 and 3.9 respectively. Section 3.10 concerns the validity, reliability and trustworthiness issues of the research. Chapter Three concludes with a discussion of ethical considerations in Section 3.11.

3.2 Research focus

There is a paucity of literature about how the use of e-portfolios makes a contribution to the development of ESL students' academic writing skills. This study investigates the use of an electronic portfolio (TaskStream E-portfolio) in an ESL writing course as a tool to support students as they work through the key phases of the writing process. The aim was to help them adopt a consistent approach to their writing practice (self-consistency), to encourage a positive view of the value and importance of writing (self-belief), and to foster a realistic appraisal of their strengths and weaknesses as writers (self-judgement). By triangulating student performance on written assignments, writing motivational constructs and student opinions related to the impact of using the e-portfolio, it is possible to conduct an exploration of

the relationship between these characteristics and the students' overall writing performance. Ultimately, the purpose of this study is to contribute to our understanding of how we can improve the scholarship of second language students in ways that serve ever-wider segments of our increasingly global society.

Thesis's main research question

Does implementing a web-based learning platform in an intermediate level ESL writing course change the learners' writing self-beliefs, writing self-efficacy, self-consistent use of the writing process with regard to writing, and does it change their writing performance?

To obtain a comprehensive understanding of the influence of this CALL technology on the ESL learners, further questions and subsidiary questions are required about each aspect of the topic.

Thesis's sub-questions:

1) Does utilizing a web-based learning platform encourage a change in ESL learners' writing self-belief?
2) Does utilizing a web-based learning platform encourage a change in ESL students' writing self-efficacy?
3) Does utilizing a web-based learning platform encourage ESL students to consistently apply a process approach to writing?
4) Does utilizing a web-based learning lead to a change in ESL students' overall writing performance?

3.3 Research design

Silva and Leki (2004) identified four elements as the components for a research paradigm in the applied linguistics field. These elements –

epistemology (the structure of knowledge), ontology (what we believe constitutes social reality), methodology (how we go about acquiring that knowledge), and axiology (the determination of value) – help to ensure the soundness of the research and to make the outcomes convincing.

Epistemology is the study of knowledge and justified belief. According to Bryman (2004), there are two major epistemological stances. Positivist epistemology believes that meaning exists without human beings' consciousness. There is objective truth waiting for people to discover it. In opposition to this epistemological stance, interpretivist epistemology insists that there is no such objective truth waiting to be discovered. Meaning is constructed rather than discovered. Different people construct meaning in different ways, even with regard to a similar phenomenon. Writing is a complicated idiosyncratic developmental process that makes it hard for researchers to study from a positivism epistemological stance. This study has adopted an interpretivist epistemological perspective in its attempt to *explain* the effects of implementing a web-based learning platform in an ESL writing course on students' beliefs about writing, and their writing performance with reference to the participants' *understanding* and *interpretation* of their perceptions and their consequent social actions. Therefore, both the participants and the researcher are social actors involved in the social phenomenon production through interaction and its constant state of revision (constructionist ontology), which together, first through participant introspection, and then through researcher interpretation, make sense of experience together.

The study adopts a combined inductive-deductive research approach to fulfil the research purpose and answer the research questions. This combination enables the researcher both to test the suitability of the existing theories for the participants of the study, to validate or modify or even reject the existing theories, or put forward new theories based on the collected data. Therefore, a multimodal methodology—which values both empirical (quantitative) and hermeneutic (qualitative) inquiries is used. This integration of methods adds breadth, richness, and depth to our understanding (Denzin and Lincoln 2005) and allows us to embrace both explanations of phenomena and social change (axiology). These methods include a survey questionnaire; log file access data, writing samples, and in-depth interviewing.

3.3.1 Sampling and recruiting participants

The purpose of the research defines the appropriate sample paradigm. The sample that is selected should be one that maximizes the relevant information in order to undertake an in-depth analysis of a specific phenomenon (Perry 2005). The study focuses on investigating the effects of implementing a web-based learning platform on English writing intermediate level ESL students' writing self-beliefs, writing self-efficacy, writing process self-consistency, and on their writing performance. To accomplish this, I adopted the guidelines suggested by Perry (2005) to select a sample that should provide both a very good example of the phenomenon that is being studied, under conditions relevant to the research question, and a manageable number of cases, given the logistical constraints. This study is not concerned with generalizing its findings to a larger population.

Nevertheless, these findings could be transferred to similar situations and used to support further research. Using these two points as the basis, the target population is all learners of ESL who attend an English-medium university. This group is impossible to get access to in practice, due to time and financial constraints. Instead, in order to gain access to participants from a population that is available, I contacted the Language Centres in Newcastle upon Tyne to gain approval for conducting the study. I then used a purposive sampling strategy to recruit the targeted participants. I defined the criterion for selecting the participants as ESL learners who were at an intermediate level of writing proficiency. The selection of participants was made using the results of the Language Centre English Language Placement Test and defining intermediate students as those with a score of 5/6 out of 10 in that test. Using this measure, sixty ESL students were identified as being at the intermediate level in terms of their English writing proficiency. One instructor teaching writing for the two groups agreed to take part in the study and encouraged her 46 students to participate. I introduced the aims of the study, the procedure, and the requirements of the study, and then I indicated that they had the right to withdraw at any stage without any prejudice. 46 ESL students agreed to participate and signed the Consent Form (see Appendix B). To establish firm cause-effect relationships was difficult. It was difficult to persuade the English Language Centre to move the randomly selected participants from their groups into new groups, and it was impossible to disentangle the interferences of various extraneous variables that would distort the findings. Therefore, a quasi-experimental

design was the most suitable choice for allocating a purposively selected sample of ESL learners into treatment (experimental) and control groups without randomly assigning participants. The teacher and I flipped a coin and assigned the first group to act as the control group and the remaining group as the experimental group. So, the participants did not themselves select the group they were placed in, but were assigned to one or the other.

3.3.2 Selecting interviewees

At the end of the first two weeks, participants completed an online questionnaire and submitted their first writing sample. After the raters (see Section 3.4) had assessed the participants' writing sample, and I finished analysing the questionnaire data, participants were organized according to their writing assessment results, and to their responses to the questionnaire, in order to identify potential participants who represented the different levels (high, mid, low) in terms of students' writing beliefs and performance. Six participants (two from each level) agreed to participate in the two interview sessions.

3.3.3 Participants

The research population sample consists of 46 English as a Second Language learners enrolled in two groups of an intermediate level writing course in an English Language Centre in the North East of the United Kingdom during the 2010 spring/summer terms. This writing course aims to teach the participants how to write in an academic style as part of the learners' language improvement programme, in order to meet the higher education

institutes' English language proficiency requirements. The course met three hours per week for 14 weeks, and the class size was 22 students in the control group and 21 in the experimental group class. They had lived in an English-speaking environment for a period ranging from 9 months to 1.5 years (M = 12 months). The first two sections served as the control group (n = 22), and the remaining two sections as the experimental group (n= 24). The two groups were heterogeneous in terms of ESL learners' English language learning experience, gender, and speciality (they specialized in a variety of disciplines). Characteristics of the participants are presented in Table 3.1.

Table 3.1 Characteristics of the study participants (n=46)

Gender	Female	15	(32.61%)
	Male	29	(63.04%)
	No response	2	(4.35%)
English language learning experience (Years of learning English)	6 years	14	(30.4%)
	7 years	8	(17.4%)
	8 years	9	(19.6%)
	More than 8 years	10	(21.74%)
	No response	5	(10.86%)

Speciality	Computer science	11	(23.9%)
	Engineering	8	(17.4%)
	Medical Science	4	(8.7%)
	Education	9	(19.5%)
	Languages	6	(13.04%)
	Food Science	2	(4.35%)
	Law	3	(6.52%)
	No response	3	(6.52%)

The control and experimental groups were taught by the same teacher at different times. The control group is taught in the morning while the experimental group is taught in the afternoon in two different buildings in an attempt to reduce the confounding variables due any interchange of ideas about the use of technology while conducting the study. The teacher implemented the process approach throughout their writing assignment with regard to various types of genres; descriptive, narrative, expository, etc. The same materials, techniques, activities, and strategies were used for the two groups. The control group members were trained to use face-to-face process approach strategies and techniques in the classroom and were encouraged to work outside. The experimental group members used the

TaskStream e-portfolio while working through the different process writing stages inside and outside the classroom. At the end of the study, members of the control group were provided with the required training necessary to use the e-portfolio.

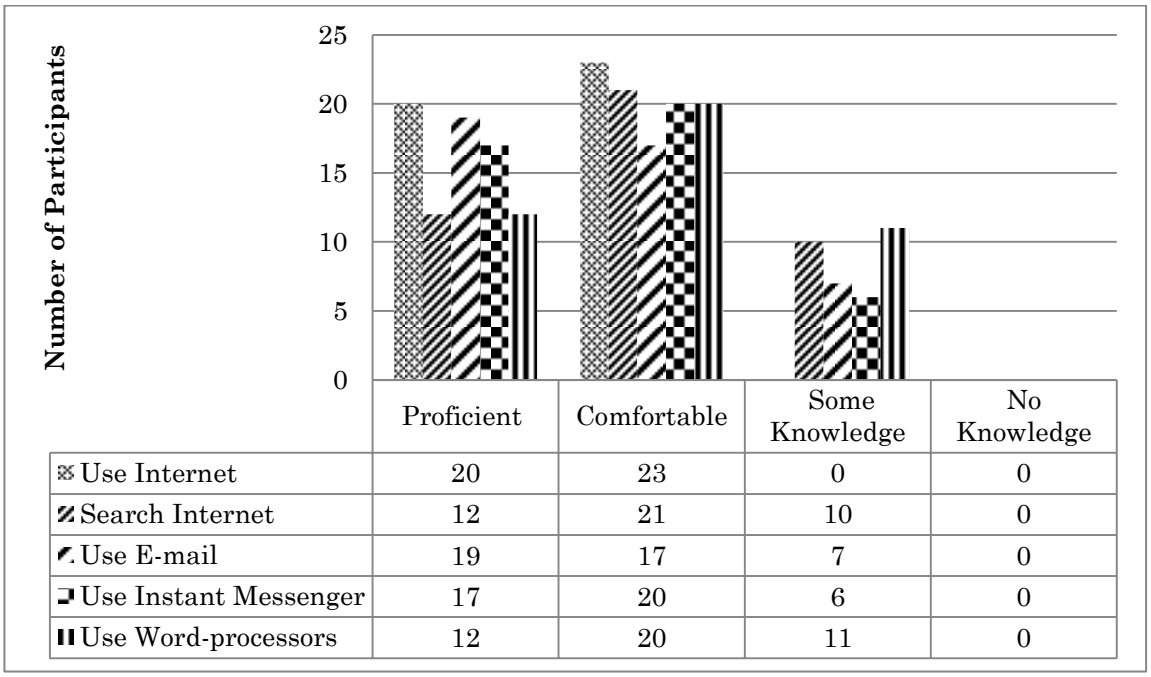
3.4 Raters

The raters were two English native teachers working at the English language institute. They were writing teachers with twelve and nine years of experience respectively in teaching writing for ESL students in the UK. They marked the 86 essays (pre- and post-test samples) using the holistic and analytical scoring criteria. The control group essays were typed before handing them to the raters in order avoid any bias in judgement due to the clarity of the handwriting.

3.3.4 Participants' basic internet skills

Basic internet skills are summarized in Figure 3.1. More than half of the participants (53.5%) claimed to be comfortable using the internet, and the rest of the sample population (46.5%) considered themselves as proficient users of the internet. 33 of the students (76.7%) claimed they could search the internet effectively, while 10 students said they were aware of the fact that they had only basic internet search abilities and of their need for assistance and tutorials. Participants claimed a high level of knowledge of how to use email accounts and the Instant Messenger (85.7% and 86.1%

respectively). However, more than a quarter of the sample (25.6%) reported a need for more training and tutorials to use word-processors appropriately.



	Proficient	Comfortable	Some Knowledge	No Knowledge
Use Internet	20	23	0	0
Search Internet	12	21	10	0
Use E-mail	19	17	7	0
Use Instant Messenger	17	20	6	0
Use Word-processors	12	20	11	0

Figure 3.1 Participants' basic internet skills

3.5 Teacher roles

The teacher agreed to use the web-based platform to post the assignment task online, setting a deadline for receiving the assignments, marking the students' work, then giving online feedback. She had two more roles to fulfil while conducting the research study. She acted as a coordinator and as a motivator. She helped to find a suitable time and venue for the participants to be given tutorials on how to use Taskstream. She also encouraged her students to join the experimental group, to use the web-based platform's various features, to exchange feedback with their peer reviewing group members, to post enquires in the forum, and to reply to other questions to help their group members. She also encouraged them to send her questions

and she replied to them and discussed these questions in the control and experimental group classes.

3.6 The researcher's role

In addition to my main task as a researcher, I acted as the writing course web-based platform administrator, provided technical support, and acted as a change agent. As the course administrator, I assigned student account codes to the participants; placed the participants in small peer reviewing groups of their choice; created the writing assessment criteria and feedback in conjunction with the course teacher; and approved participants' requests to invite external reviewers to rate their work. For technical support, I designed a simple set of guidelines for the participants to use TaskStream effectively while executing the various tasks associated with the writing course. I ran two tutorial sessions for the participants in order to introduce the different sections of TaskStream, such as the writing process tutorials section, peer reviewing, and submitting essays section. During the sessions, I demonstrated how to submit their writing for feedback from their peer reviewing group members before submitting them for, and when they received their marked essays, I also modelled how to use the tutorial sections and the different checklists when reacting to their writing tasks. As a live technical supporter, I was online for three hours every day from 5 p.m. to 8 p.m., and responded to their technical enquires posted on the forum, or sent directly to my e mail account. Training the participants to use Taskstream to perform their essay writing in various stages as a process leading to the production of their final draft text, and working to persuade

them to collaborate online with peers and the teacher who acted as evaluators, and training the teacher to use the marking features of Taskstream, defined my (the researcher's) activity as a change agent as defined by Rogers (1983), who views the change agent as "…someone who assists the clients in their understanding of the innovation and assists them in adopting the proposed project" (p. 58).

3.7 Methodology and research methods

Since the choice of methodology design was centred on the purpose of the investigation as indicated in Section 3.2, this study adopted an embedded mixed methods design to collect multiple data using different strategies, approaches, and methods, in such a way that enabled the researcher to conduct an experiment (quantitative), and within that experiment, collect qualitative data that provided information as to how the participants experienced the intervention (Creswell 2008). The use of mixed methods entailed the researcher having to scrutinize the effect of implementing a web-based learning platform (the phenomenon) on different facets of ESL learners' writing self-beliefs, writing efficacy, writing process self-consistency and writing performance. The resulting mixture or combination of data findings provided a great deal of detail as a means of achieving an elaborate and comprehensive understanding of the complex phenomenon by illustrating, clarifying, or elaborating certain aspects (Johnson and Turner 2003; Sandelowski,2003). Combining and increasing the number of research strategies used within this study broadened the scope of the investigation

and enriched the researcher's ability to draw conclusions about the problem under consideration (Mertens 2005).

3.7.1 Quantitative research methods

3.7.2 Questionnaire

A questionnaire is one of the most popular quantitative research instruments that researchers often utilize first when undertaking research in the social sciences (Dornyei 2007). A questionnaire is a written instrument that is designed to collect substantial amounts of information in a relatively short period of time, by presenting the targeted sample of respondents with a series of questions or statements to which they are to respond, either by writing their answers or by selecting them from among existing possibilities (Brown 2001). Dornyei (2003) attributes the popularity of using questionnaires to the fact that they are "…relatively easy to construct, extremely versatile and uniquely capable of gathering a large amount of information quickly in a form that is readily processable and … relatively straightforward, especially by using some modern computer software" (pp. 101-107). The widespread use of, and familiarity with, the internet has paved the way for employing online questionnaires to collect data rather than in the regular paper-form or through telephone questionnaires. This choice was not based on the fact that this study is investigating the implementation of a web-based learning platform. Rather, an online questionnaire was preferred because it has several features which can enhance the effectiveness of the research and can increase the response

rate as part of a mixed-mode methodology (Dillman et al. 2009). These are as illustrated below:

Ease of access: the internet grants swift, easy and safe access to individuals and groups worldwide, despite the geographical, political, and cultural obstacles that would be difficult and costly to overcome through other channels (Madge 2006; Wright 2005). Also the targeted research population can easily access online questionnaires and complete them at a time and place convenient to them, and at their own pace (Madge and O'Connor 2002).

Reduction in cost and time saving: using an online questionnaire service to collect data is relatively inexpensive (around £15 per month) compared to the cost of traditional paper-and-pencil questionnaires that tend to be costly in terms of paper, printing, and postage when it is in a paper-form, or the cost of telephone calls (Couper 2000; Llieva et al. 2002). Online questionnaires are completed more quickly than their equivalent telephone or face-to-face administered versions (Brace 2004).Online questionnaire costs include storing a large volume of information in a secured database and importing them quickly into a suitable format for consideration by statistical packages such as SPSS as used in this study, in order to be coded and analysed. This can take place even while the researcher is waiting for the desired number of responses to accumulate. S/he can perform preliminary analyses on the collected data at any point in the process (Llieva et al. 2002; Wright 2005).

Design flexibility: most online questionnaire software tools enable the researcher to choose a user-friendly interface layout and the ability to customize the layout to make it more attractive in order to encourage a greater response rate (Madge 2006). The researcher can include audiovisual material as items in his/her questionnaire (Taylor 2000). The questionnaire items can be randomly ordered for each participant, and provided with pop-up help windows to help the participant understand the question or statement. Skip notice prompts can be activated to remind the participant of any missing item before moving to the next page or before submitting the questionnaire. The researcher can easily modify the questionnaire items, rephrase, add and delete the items, and post the new questionnaire link or email it to the research population sample in a significantly short period of time.

Also, participants may have a save option that enables them to continue the questionnaire later at their own convenience. Some online questionnaire software tools may enable multi-lingual formats to be used in conducting the research project (Joinson and Reips 2007).

Participants' Anonymity: online questionnaires provide anonymity to participants and eliminate the onsite questionnaire observer bias, irrespective of whether the observer was the researcher or the teacher. It allows participants to respond to sensitive questions about their course, instructor or their beliefs in privacy, and in an atmosphere free from observer or school effect that may influence reliability (Braunsberger et al. 2007).

Despite these advantages of using an online questionnaire as an instrument to speed collection, increase the volume of data and accurately transform data into spreadsheets to be coded and analysed properly, many researchers have voiced their concern about potential problems with research sample bias and ethical issues (Andrews et al. 2003; Madge 2006; Umbach 2004; Wright 2005) which will be discussed in detail in the section dealing with the questionnaire design, development and piloting phases.

Questionnaire design

An online survey questionnaire with multiple components was developed to assess the change in ESL students' English writing self-concept, their perceived value of writing in English, their English writing anxiety, their writing self-efficacy in English, and their consistency with regard to applying a process approach to writing in English. The questionnaire design went through the following stages:

Reviewing previous literature: Reviewing the pertinent literature revealed that numerous studies have evaluated students' writing self-concept, self-beliefs, writing anxiety, writing self-efficacy and consistency. Those using a process approach in writing assignments have adopted certain questionnaire instruments that have been extensively tested in terms of validity and reliability to gauge the change in these variables. All this has served as a preliminary conceptualization for this study questionnaire (Oppenheim 1992). This initial stage of questionnaire design focused on clarifying the research problem and identifying what critical concepts need

to be addressed by the questionnaire. The first section contained items which assess students' writing self-concept and endeavours to present a descriptive judgment of each student's perceived self as an English writer by using an adapted version of Marsh's (1990) Academic Self Description Questionnaire (ASDQ II) for the English Language. The English writing self-concept scale consisted of 8 items. The perceived value of English writing made use of nine items selected from Eccles' (1983) Student Attitude Questionnaire to assess students' interest, enjoyment, and the perceived importance of writing in English. The writing anxiety in English scale was opted for in order to measure their apprehension with regard to writing. 12 items were adopted from Cheng's (2004) Second Language Writing Anxiety Inventory (SLWAI) to gauge the ESL writer's apprehension in terms of the avoidance of writing, assessment anxiety, writing panic, and peer essay derision. Writing self-efficacy scale items were adapted from Mills and Péron's (2009) global simulation and writing self-belief developed with college intermediate French students. This scale assesses how confident ESL students are with regard to their ability to write essays in English in the areas of content (8 items), organization (4 items), expression (4 items) and grammatical structure (6 items). The last section of the questionnaire assesses the ESL students' consistency when it comes to applying a process approach to writing in English. The scale is based on the eight subscales created by Zimmerman (2002) and on Zimmerman's (2005) adoption of the self-regulation three-phases to analyse learning in computer-based learning

environments (CBLEs). The researcher also screened a number of academic research papers and doctoral theses published in these areas for ideas.

Developing the questionnaire: The research questions determine the questionnaire variables to be measured and the sequence of the items to be used (Bradburn et al. 2004; Oppenheim 1992). Selected items were categorized with their associated variables initially, then modified and brought together with the questionnaire questions and statement design guidelines (Bradburn et al. 2004; Dornyei 2003). Early drafts of the questionnaire which attempted to cover every variable meticulously were found to be too long. They were then reviewed against the specific aims of the study and the threat of a lack of comprehensiveness. Consequently, the researcher re-evaluated and re-organized the questionnaire content. Some items were modified or changed, and new items were added.

Validating the questionnaire: several drafts of the questionnaire went through a series of validation processes, following the questionnaire design guidelines proposed by Oppenheim (1992), Dornyei (2003) and Bradburn et al. (2004). The main research supervisor suggested the elimination of many items that were found unnecessary or which overlapped with other items in the questionnaire. He suggested some changes to the sentence structures to avoid using negatives and double negatives in the statements adopted from Cheng's (2004) Second Language Writing Anxiety Inventory (SLWAI) and to avoid double-barrelled statements such as "Learning about different writing ***techniques*** and ***styles*** is important for me", and on wording levels to accord with the target population samples' proficiency level. He suggested linking

the questionnaire items in order to assess the defined variables with the web-based learning platform characteristics, in order to portray a holistic image of how these two sources integrate in order to present condensed data. The new modified version of the questionnaire was submitted to the thesis co-supervisor and two faculty members to solicit feedback. A further modification was performed to execute a suggestion made by two of the questionnaire reviewers to rephrase a particular statement using neutral terms in order to avoid bias and the tendency to lead to a specific choice. Two doctoral colleagues and an experienced ESL English native speaking teacher were also solicited for feedback to ensure the clarity and appropriateness of the questionnaire statements to the targeted participants. Suggested changes were reviewed and the questionnaire was reedited to the final format prior to being piloted.

Piloting the questionnaire: piloting the online questionnaire on a small sample similar to the target population of the study enabled the researcher to investigate possible problems with the questionnaire as perceived by the pilot group in the study (O'Lear 1996) and to avoid sample bias based on limited access to a particular ethnic group or of a particular language background such as Russian and French ESL students in this study (Andrews et al. 2003; Couper et al. 2007). Intermediate proficiency level ESL students at three recognized English Language centres in the Newcastle upon Tyne area were approached through their English Language Programme directors and writing teachers, asking them to be voluntary participants in completing an online questionnaire. The questionnaire was

hosted on the servers of a specialized company (SurveyMonkey.com) to create and administer a convenient, user-friendly interface questionnaire (Evans and Gibbons 2007). SurveyMonkey enables academic and business organizations to design their own unique templates starting from choosing their colours, uploading logos, and offering a wide range of choices in formatting the questionnaire items. It also includes safeguarding features that reduce the number of missing answers such as forced answers whereby the participant cannot advance to the next item without providing the required information. It also has the ability to schedule mail-outs and track and store responses. Future messages can be scheduled for delivery to non-responders only, or to an entire mailing list (Evans and Gibbons 2007).

SurveyMonkey.com assigns each participant a survey ID and records it with the participant's computer IP address number to prevent an individual filling in the questionnaire more than once. It also prevents spam emails, and this makes web-based recruitment fruitful (Fricker 2008). Twenty one participants reacted to the invitation and completed the questionnaire. Participants were asked to examine the questionnaire items for clarity first and the time they needed to complete the 68 closed-ended items (see Appendix C). Participants answered and then were asked to add further information in response to the 'What else?' probe. This probe "…makes a presumption that there is more that the respondent wants to say and puts the onus on the respondent to indicate that he or she has no more to say" (Brace 2004, p.64). A quarter of the participating sample (10 participants) completed the questionnaire in about 25 minutes; eight students took up to

42 minutes. The remaining three participants finished and submitted the survey in about 50 minutes. The revealed data indicated that item # 25 "I am afraid of my English composition being anonymously chosen as a sample for discussion in class" was incomprehensible for about seven of the participants. Participants found new vocabulary items that made the statements difficult to understand as most students indicated in the 'what else' section of the questionnaire. Collected data were downloaded and saved in an SPSS format file. Appropriate labelling of items, values and missing value coding was performed before some analysis was carried out to confirm that the questions asked were delivering the data required to answer the study aims. The analysis process revealed that the questionnaire's Cronbach's alpha coefficient scores of 0.83 denoted a good internal consistency level with regard to the items in the survey instrument. This questionnaire reliability score indicates trust in the questionnaire, and confirms that the assembled interrelated items would elicit the same responses if the same items were recast and re-administered to the same respondents. The analysed data and the interpretation of the results were reviewed thoroughly with an expert recommended by the thesis supervisor. Further changes in the wording level were performed to make the items more comprehensible in the study questionnaire (see Appendix D).

The piloting stage broadened my understanding of how to code, analyse and interpret the findings to define the interrelated factors in this multi-scale survey instrument. It also helped me to create an online survey and to administer it with a minimum of technical hurdles.

3.7.3 The web-based learning platform log files

The second source of quantitative data was the learners' web-based learning platform log files. Most virtual Learning Environments such as Blackboard and Taskstream maintain a record for each user's (learner's) activities which include information about each interaction of the user with the system. This is used for improving the design of the software system and to provide an overview of system use (Schümmer et al. 2005). These records (the log files) contain a very large variety of information about the number of times each user accesses the learning platform website; the duration of access for the website in general and for each webpage; hyperlinks, posted messages and thread length; the number of written words, the user's IP address (location of access) and the nature of performances and activities conducted on the website (Hewitt 2003). Nurmela and Palonen (1999) define three characteristics that make log files important in the computer assisted language learning environment: firstly, they can be used automatically, precisely and effectively to allow data collection. Secondly, analysing this information enables the research to evaluate the learner's individual and collaborative actions as a whole. Thirdly, this feedback can be made available to the learning community immediately. Therefore, these data files are a potentially valuable source of information with regard to educational systems to track the learners' actions and responses and then to allow them to be analysed and presented in a comprehensible form as part of a detailed report (Cocea and Weibelzahl 2006). The analysed data help to determine potential active participants, since the log files introduce a surface analysis

level that does not entail the researcher having to decide to what extent the user's activities are contributing to the learning process (Schümmer et al. 2005). Therefore, data extracted from log files should be triangulated with other data derived from other instruments (Stahl 2001) to provide a sufficient level of input to identify the active participants in their interaction with the interface, and of students in the learning progress (Gibbs and Rice 2003).

This study employed several attributes of the log files presented in Table 3.2.

Table 3.2 Log files characteristics employed in this study

Event	Attributes/Characteristics	Description
Login/logout	User ID	A unique identifier per user
Goal	The purpose of using HTML-Tutor	
Preferences	Template designs, fonts, colours, etc.	Different options can be chosen by the user
Page access	Page ID	Each page has a unique identifier
Number of pages accessed	Number of pages	The number of accessed pages
Hyperlink	The Page ID of the triggered page from the link	The Page ID of the triggered page from the link
Glossary		Word looked up
Communication		Access to a discussion list and if a comment has been made
Search		Terms searched
Remarks		User's Remarks

Statistics	Time	Users can see statistics about their activity such as: time from the last login, percentage covered in a certain topic

3.7.4 Student writing

The students worked on variety of topics as a part of their writing course. Copies of students' first writing assignment were collected from the control group, while an electronic copy of the experimental groups' posts of the first essay on TaskStream were also collected as their pre-test writing sample. Two independent raters assessed the writing samples using a five-point holistic scoring rubric used by the TOEFL (2002) (see Appendix E) to ascertain the existence of significant differences in the two groups' writing performance. These writing samples were then assessed using a five-point writing analytic grading scale modified from Paulus (1999). This scoring guide was selected because it allowed for an analytical assessment of both the global and the local aspects of writing: content, organization, word choice and conventions (see Appendix F). A second sample of students' writing assignments was collected from both the control and the experimental group in the tenth week. These samples were assessed using writing holistic and analytical scoring criteria. These writing samples were originally prepared only to meet their writing course requirements. I was allowed to use them as a resource in this study in order to reduce the reactive effect (Byrman 2008), as a means of increasing the validity of the data.

3.7.5 Qualitative research methods

Qualitative research aims to understand what it is like to experience a certain phenomenon in its specific natural context. That is, qualitative research studies subjects (ESL learners) in their natural setting (a writing course) to discover what people do, and how they interact with each other and with the surrounding variables (course assignments, class peers, Taskstream, the teacher). Therefore, it looks at the process rather than predicting the learner's final product (Strauss and Corbin 1998; Gerring 2007). Qualitative research deploys a wide range of interconnected interpretive methods, each of which make the world visible in a different way, collecting a variety of empirical materials that describe routines and problematic moments and meanings in individuals' lives, in order to get a better understanding of the phenomenon under investigation (Denzin and Lincoln 2005).

3.7.6 In-depth interviewing

Interviewing is the most common data collection instrument in qualitative research (Mason 2002, Dornyei 2007; Rubin and Rubin 2005). The good reputation of the interview as a distinctive research technique is due to its use for a wide range of purposes. According to Cohen, Manion and Morrison (2007) the interview has three purposes: first, it may be used as the principal means of gathering information which has a direct bearing on the research objectives. Second, it may be used to test hypotheses or to suggest new ones;

or as an explanatory device to help identify variables and relationships. Third, the interview may be used in conjunction with other methods in a research undertaking. The interview is also a flexible tool that provides multi-sensory channels to compile data: verbal, non-verbal, spoken and heard. These multi-functioning purposes of the interview are shaped by the different perspectives of researchers with regard to defining the concept of the interview in the qualitative research literature. This study adopted Kvale's interpretation of the interview "…as an *inter-view*, an interchange of views between two or more people on a topic of mutual interest, which sees the centrality of human interaction for knowledge production, and emphasizes the social situations of research data" (2009, p.14). This definition relates closely to what other researchers assume the interview is about: Mishler (1986) looked at the interview mainly as a social event; Behar and Gordon (1995) described it as narrative practice; Rubin and Rubin (2005) described it as a conversation between partners. This interpersonal interaction between the interviewer and the interviewee as a means of exchanging beliefs and views about a particular topic of interest, provides access to the milieu of the participants' behaviour, and thereby provides a way for researchers to understand the participants' life experiences and the meaning they carry with them, so that that experience is reflected in their behaviours and attitudes.

There are several forms of interviews such as structured (standardized) interviews; semi-structured (guided) interviews; in-depth interviews; ethnographic interviews; focus groups and exploratory interviews. These

types of interviews differ in the openness of their purpose, their degree of structure, the extent to which they are exploratory or hypothesis-testing, whether they seek description or interpretation, and whether they are largely cognitive-focused or emotion-focused (Kvale 2009, pp.126 -127). This study employed the in-depth interviewing form which elicits a vivid picture of the participant's perspective on the research topic. It is a practical technique to conduct intensive individual interviews with a small number of participants to explore their thoughts and behaviours with regard to a particular idea, programme or situation (in this case implementing a web-based learning platform in an ESL writing course) in detail, in such a way as to offer a more complete picture of what happened in the programme and which will help them answer the research questions (Boyce and Neale 2006).

The interview is a constructed rather than a naturally occurring situation. This makes it different from an everyday conversation; therefore the researcher has an obligation to set up an in-depth interviewing situation, establish rapport with the interviewee to make him or her feel comfortable with regard to engaging in a detailed conversation that reveals his or her nuanced beliefs, feelings, intentions, meanings, or thoughts on a certain topic or situation (Cohen et al. 2007; Lichtman 2010). It affords more detailed information leading to more satisfactory answers to the questions which are the purpose of the interview, avoiding any misunderstandings or vague statements produced by the participants during the interview, and allowing the elucidation of data available through other data collection methods such as the questionnaire. Therefore, in-depth interviewing helps

triangulate data which enhances the research's reliability and makes it more sufficient and more satisfactory in terms of the aims of the research.

Despite these advantages, there are some drawbacks to the in-depth interviewing technique that the interviewer should be aware of prior to applying the instrument to collect data. These drawbacks include the fact that the interviewer and interviewee may be prone to subjectivity and bias due to their position in the study, or for other reasons (Boyce and Neale 2006). The lack of sufficient training in the use of different interviewing techniques on the part of the interviewer may result in him/her asking questions that may lead the participants with regard to preconceived notions, or may encourage participants to provide particular answers by expressing approval or disapproval with regard to what they are saying. This could make the participant feel uncomfortable, which could influence the reliability of their responses. Participants' anonymity is another critical concern when it comes to retaining and avoiding the inclusion of details that may help in identifying the interviewee (Creswell 2008). These concerns were considered while planning, developing and piloting the interview questions as illustrated in the questionnaire section.

Designing the in-depth interview

Planning and developing the interview

The in-depth interview aimed to find out what the participants want to say in their own words, in their own voices, using their own language and narrative formats about five identified topic areas: ESL students' English

writing self-concept; their perceived value of writing in English; their English writing anxiety; their writing self-efficacy in English; and their consistency when applying a process approach to writing in English. These topic areas have already been defined by the main research questions.

An interview protocol was developed to guide the administration and implementation of the interviews (see Appendix G). Three participants from the 21 participants who completed the survey agreed to take part in the piloted in-depth interviews. The individual face-to face interview sessions were scheduled for 45 minutes. Prior to conducting the interview, the participating interviewees were informed about the interview goals and procedures, and were assured that their identities and what they had to say would be kept in strictest confidence. Interviewees were also required to sign a consent form to permit the interviewer (the researcher) to conduct the interview and to use a recording device.

Piloting the interview

The researcher adopted Sampson's (2004) proposal to make use of a pilot interview to augment the development of the instrument; to frame the questions (in terms of clarity of meaning and the use of simple language appropriate for the participants) ; to assemble the interviewees' background information, and to acclimatize the interviewee to the precise interview implementation procedure. Before starting the interview, I explicitly provided some preliminary information about the aim of the interview - what

I would do with the collected information; how the data would be analysed and how long the interview would take - as recommended by Lichtman (2010). The first few minutes of the interview are crucial and invaluable in terms of establishing trust, comfort and rapport with the interviewees, to ensure that they freely cooperate in the interview. Therefore, the interviewer commenced with some personal information - 'chitchat' - about how the researcher had learned English writing. This helped to establish a rapport with the interviewees. There was then some sharing of personal information which made them more comfortable and continued to develop the rapport. Then, following the interview protocol, with the interviewer asking the interviewees an open-ended question that was the related to their personal experience, giving them time to express themselves, listening attentively and asking follow-up questions. These were used to elaborate and to clarify and elucidate their responses, with probing being used to get at the underlying meaning of their responses (Lichtman 2010; Silverman 2010). While conducting the interview, the interviewer took notes of the answers, and of any signs of impatience, annoyance, and boredom on the part of the participant, and checked the audio recording. At the end of the interview, the interviewees were asked if there was anything more they would like to say. Then the interviewer expressed his thanks and gratitude for their cooperation and informed them that they would receive an English translation of their interview to review and approve for use in this study. Once the interviewee had left, the interviewer immediately summarized the key data before leaving the interview site.

Analysing the interview data

The researcher firstly transcribed the data, and then reviewed the audio recording of the interview and the notes he had taken while conducting the interview, multiple times. Then, as the second step, using the interview guiding questions, the researcher grouped the participants' answers to each topic as defined in the interview protocol. The researcher grouped together comments that referred to specific themes, irrespective of which question they related to. The findings indicated the need to adjust some questions to elicit more information about the interviewee's beliefs with regard to writing, and the need to probe to allow them to elaborate more on their responses regarding their consistency in using a writing process approach to perform their writing essay assignments.

Administering the in-depth interview

The researcher conducted an hourly interview session with each interviewee, on two occasions during the term. The first one was conducted during the second week of the study when six participants of the experimental group agreed to participate in the study. The sample varied in their English writing proficiency levels (two high level participants; two low level participants and four representing the middle). The first interview aimed to establish the details of the interviewee experience within the context. The second interview was carried out during the last week of the term. The same sample was encouraged to reflect on the meaning of their experience in using the web-based learning platform in their writing course. Interview sessions

were audio recorded and notes were taken then transcribed. Data were grouped according to both the themes and the main questions of the study.

3.8 Data collection

Due to the various methods used in this study, data were collected during different parts of the summer term. During the first week, participants completed an online pre-test questionnaire. They then submitted their first writing sample as their pre-test writing sample at the beginning of the second week. Six participants agreed to be interviewed and data were collected during the second week. During the tenth week, participants submitted their second writing sample to be evaluated as their post-test writing sample, and the second set of interview data were collected from the six participants. During the last week of the study, the participants were asked to complete an online post-test questionnaire, and to submit their self-reflection form.

3.9 Data coding

Data coding is a "…systematic way in which to condense extensive data sets into smaller analyzable units through the creation of categories and concepts derived from the data" (Lockyer 2004, pp.137-138). The categories created to code the data can be determined ahead of time, or can emerge from familiarity with the new data (Freankel and Wallen 2003). Both techniques were adopted in coding the data associated with the current study. The research questions acted as a framework for defining the themes in order to collect data using the different quantitative and qualitative research

instruments. The participants' verbal data responses to pre-post test questionnaires were converted into variables using numbers, so that the data could be entered into a computer for analysis by using the SPSS program. Taskstream Language Achievement tool web-based software features were scrutinized and categorized with the other research techniques, to gather data suitable for each of the research questions. Interviews were transcribed to extract the evidence to support the various themes of the study.

3.10 Validity, reliability and trustworthiness of the research

Healy and Perry (2000) indicated that the quality of a piece of research has to be assessed by the terms associated with each paradigm. Therefore, the quantitative paradigm of this study is assessed in terms of its validity and reliability, and the qualitative paradigm is assessed in terms of its trustworthiness, which includes credibility, neutrality or confirmability, consistency or dependability, and applicability or transferability (Guba and Lincoln 1994).

3.10.1 Validity and reliability of the quantitative paradigm

Validity is generally depicted as the degree of *accuracy* with which the given instrument *measures what it is designed to measure* (Hughes 2003; Weir 2005), or the "…appropriateness of a given instrument or any of its component parts as a measure of what it is proposed to measure" (Henning 1987, p.170) as closely as possible to real-life language use situations. To

assess the content validity of the questionnaire survey as the quantitative source of data used in this study, the final draft of the questionnaire was reviewed by three faculty experts in the field of Applied Linguistics, Writing and Language assessment, two doctoral students and two ESL writing teachers, to validate the questionnaire's ability to provide a representative sample of items to measure the main skills of the writing course (Fulcher and Davidson 2007). Minor adjustments were requested, and then the questionnaire's content validity was confirmed by the experts. Face validity was assessed and confirmed.

Reliability refers to the consistency of the results if the instrument (the questionnaire) is reproduced over a period of time using a similar methodology, and an accurate representation of the total population under study is used. It is referred to as reliability if the results of a study can be reproduced using a similar methodology (Joppe 2000). To obtain the questionnaire's reliability, the researcher uses multi-items instead of a single item to measure the same target area. This is essential in terms of meeting the internal consistency reliability requirements. This attribute refers to the homogeneity of the items making up the various multi-item scales within the questionnaire (Dornyei 2003). The questionnaire piloting stage data were collected, coded and then analysed using SPSS to find the questionnaire's internal consistency coefficient (*Cronbach Alpha coefficient).* The results indicated that the questionnaire had an internal consistency coefficient of higher than the 0.70 value that Dornyei (2003) considered acceptable in conducting a questionnaire due to "…the complexity of the

second language acquisition process nature" (2003, p.85). Cronbach's internal consistency reliability alpha was computed for each of the main study major subsections of the questionnaire: perceived value of writing, writing self-concept, writing anxiety, writing self-efficacy and writing process self-consistency (Table 3.3). A high internal Cronbach's alpha was found for each subscale.

Table 3.3 Reliability analyses for the study (N=43)

	N of items	Cronbach Alpha
Perceived value of writing	8	.884
Writing self-concept	6	.750
Writing anxiety	12	.886
Writing self-efficacy	15	. 842
Writing process self-consistency	27	.871

3.10.2 Trustworthiness of the quantitative paradigm

Credibility

Credibility can be defined as "…the methodological procedures and sources used to establish a high level of harmony between the participants' expressions and the researcher's interpretations of them" (Jensen 2008, p.138). To enhance the credibility of the findings, the researcher discussed his work with disinterested groups of peers (at a monthly peer debriefing) in a manner akin to cross-examination, in order to test honesty, the working hypotheses and to identify the next steps in the research, as suggested by

Cohen et al. (2008). Participants were consulted to make sure that the data analysis was accurate and consistent with their beliefs and their perceptions of the context being studied. Triangulation of the research methods (mixed methods); sources (questionnaire, interviews, documents, and access files); and theoretical framework (sociocultural theory, writing process, self-beliefs, and self-regulations), enhanced the credibility of the research as a result of the multiple sources of data and the use of the multiple data-gathering techniques.

3.10.3 Transferability

The transferability or generalizability of a qualitative research study implies that the results of the research can be transferred to other contexts and situations beyond the scope of the study context. This attribute has often been considered as a weakness due to the difficulty of generalising from a small non-random sample to a larger population (Yin 2003). The researcher adopted a thick description strategy to provide the reader with a full and purposeful account of the context, participants, research design, data-collection techniques and data analysis procedures, in order to present a holistic image of the research and to leave the decision to the reader with regard to the generalizability of the study findings. The purposeful selection of the participant sample was based on the nature of the research design and the limitations of the study. Therefore, the fact that the participants were closely considered with the research design will enhance the potential for the reader to assess the degree of transferability of the findings to their given

context (Donmoyer and Donmoyer 2008).

3.10.4 Dependability

Dependability refers to the extent to which research findings can be replicated. The difficulty lies in the openness to change and to variations in the qualitative context. This requires the researcher to acclimatize to appropriate strategies. To overcome this challenge, the researcher provided adequate and relevant data that were carefully, accurately and honestly reported, to enable others to replicate the study (Jenson 2008; Mason 2002). The researcher tracked the essential alterations to the research design due to the variability of the study environment, and reviewed these changes with the help of external agents (supervisors, panel members, colleagues) as part of the inquiry audit, to ensure that the various changes in the research design had both methodological and theoretical foundations, and were linked to the revealed data (Jenson 2008).

3.10.5 Reflexivity

Researchers should acknowledge and disclose their own selves in the research, seeking to understand their part in, or influence on, the research. This is done rather than trying to eliminate researcher effects through developing reflexivity that involves reflecting on the way in which research is carried out, and understanding how the process of doing research shapes its outcomes (Hardy et al. 2001). It is an interpretation executed by the researcher to justify the choice of the research design, the use of particular methodologies and finding interpretations that lead to particular conclusions

in a way that makes the research process transparent, clear to outsiders and therefore accountable (Finlay 2002). Reflexivity requires a self-conscious awareness on the part of the researcher on his/her effect, and that of other participants, on the research process, on the alterations that occur while conducting the research, and on the interpretations of findings leading to particular conclusions. This awareness led to the development of thick descriptions of the different stages of the research as illustrated in the previous sections of this methodology chapter, and further in the findings and discussion chapter, in order to reduce any potential prejudices or biases with regard to the data by the researcher.

3.11 Ethical considerations

Social science research in general and qualitative research in particular, is immersed in the messy, chaotic reality of on-the-spot personal interaction, sensitivity and experience (Parker 2005). This demands that the researcher employs high standards of academic rigour, and that s/he behaves with honesty and integrity to preserve the participants' human dignity. The participants' personal life events and their interaction with their surrounding environment are observed and recorded, which creates a concern about the possibility of violating the ethical code which requires the researcher to keep the participants' information confidential and anonymous, as the reported information may allow the reader to identity the participant. The researcher wrote an official request to conduct the study at the three English Language Centres with a detailed proposal of the study's

aims, and how the students, the teachers and the institute would benefits from conducting the study (see Appendix H). Official permission was obtained from only one English Language Centre. The researcher provided potential participants with information about the purpose, methods, demands, inconveniences, discomforts, length of the study, its potential benefits, the researcher's role, and the possible outcomes of the research, prior to asking the participants to sign the informed consent agreement with regard to participating in the study. Limitations of access to participants' records were discussed with the participants, and assurances were given with regard to keeping their identities anonymous and their data confidential while reporting, and to preserve the research structure and the content accuracy (Gerring 2007). Participants were involved in discussion of the meanings and implications of emerging conclusions concerning their interviews since, according to Stake (2005, p.244) "Qualitative researchers are guests in the private spaces of the world. Their manners should be good and their code of ethics strict".

Chapter 4: Quantitative research results

4.1 Overview

The purpose of this study was to introduce the TaskStream e-portfolio into an ESL writing class to help the participants to adopt a consistent approach to their writing practice (self-consistency), to encourage a positive view of the value and importance of writing (self-belief), and to foster a realistic appraisal of their strengths and weaknesses as writers (self-judgement). The study sought to examine the significance of its use on these characteristics and on their relationship with the students' overall writing performance. Therefore, the research questions were as follows:

- Does utilising a web-based learning platform encourage a change in ESL learners' writing self-beliefs?
- Does utilising a web-based learning platform encourage a change in ESL students' writing self-efficacy?
- Does utilising a web-based learning platform encourage ESL students to consistently apply a process approach to writing?
- Does utilizing a web-based learning platform to a change in ESL students' overall writing performance?

The questionnaire data was analysed to find any significant differences in the pre- and post-questionnaire answers with regard to students' writing self-beliefs, self-efficacy and self-consistency in Section 4.2. Pre- and post-intervention writing samples were also analysed to find any significant

differences in their writing performance, and the relationship between students' writing motivational characteristics and their writing performance in Sections 4.3 and 4.4 respectively. Section 4.5 presents TaskStream e-portfolio data from students' log-in files. Section 4.6 summarizes the results obtained.

4.2 Questionnaire data

4.2.1 Analysis of the questionnaire data

There is some dispute amongst scholars about whether or not Likert scale data should be analysed using parametric statistics, such as the t-test, or non-parametric statistics such as the rank-based Mann-Whitney test (Carifio and Perla 2008; de Winter and Dodou 2010). The possibility of using either parametric or non-parametric tests to analyse ordinal data complicates the process of selecting the appropriate test (Bryman 2004; Field 2005). Therefore, it is essential to determine whether or not the data fulfil all three conditions necessary for computation using the appropriate parametric test. Bryman (2004, p.143) indicated that these conditions are that:

(1) the level or scale of measurement is of equal interval or ratio scaling, that is, more than ordinal;

(2) the distribution of the population scores is normal; and

(3) the variances of both variables are equal or homogeneous.

The collected data is for ESL learners' psychological variables in terms of writing self-concept, writing self-efficacy and writing process self-

consistency. These are basically ordinal in nature, where the numbers signify a rank of a case rather than an interval.

For the second condition, data for each ESL writing-related psychological variable was graphically represented and statistically tested to confirm that it was normally distributed. The Q-Q normal probability charts (see Appendix I) show that the dots do not cluster around straight lines, and therefore this assumption is not satisfied. The Shapiro-Wilk test was then applied, since the sizes of the samples are less than 50 per group (n=22 for the conventional group and n=21 for the e-portfolio group). The result presented in Table 4.1 indicate that the p value is less than 0.05, and therefore the data is considered not to be normally distributed.

Table 4.1 Data for test of normal distribution

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Group	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test perceived value of writing	Control	.174	22	.084	.875	22	.010
	Experimental	.169	21	.120	.860	21	.006
Post-test perceived value of writing	Control	.228	22	.004	.891	22	.020
	Experimental	.197	21	.033	.934	21	.163
Pre-test writing self-concept	Control	.154	22	.192	.907	22	.042
	Experimental	.116	21	.200*	.947	21	.301
Post-test writing	Control	.242	22	.002	.905	22	.037

self-concept	Experimental	.203	21	.023	.907	21	.049
Pre-test writing anxiety	Control	.352	22	.000	.632	22	.000
	Experimental	.318	21	.000	.822	21	.001
Post-test writing anxiety	Control	.246	22	.001	.881	22	.013
	Experimental	.293	21	.000	.858	21	.006
Pre-test writing self-efficacy	Control	.312	22	.000	.756	22	.000
	Experimental	.173	21	.103	.915	21	.071
Post-test writing self-efficacy	Control	.220	22	.007	.869	22	.007
	Experimental	.242	21	.002	.828	21	.002
Pre-test writing self-consistency	Control	.346	22	.000	.720	22	.000
	Experimental	.217	21	.011	.905	21	.044
Post-test writing self-consistency	Control	.249	22	.001	.861	22	.005
	Experimental	.387	21	.000	.640	21	.000

a. Lilliefors Significance Correction

*.This is the lower bound of the true significance.

A one-way ANOVA test was then performed to determine if the variances of the variables were equal or homogeneous. The findings in Table 4.2 show that the *p*-values for Levene's test vary from 0.024 to 0.81 which are greater than the significance levels. This means that the variances of variables in the two groups are not homogeneous, and therefore the non-parametric Mann-Whitney *U* statistical test for two independent samples was used to compare the medians of the data of each pair of groups in order to answer the first three research questions.

Table 4.2. Homogeneity of variances test

	Levene Statistic	df1	df2	Sig.
Pre-test perceived value of writing	.076	1	41	.784
Post-test perceived value of writing	1.606	1	41	.212
Pre-test writing self-concept	.780	1	41	.382
Post-test writing self-concept	4.835	1	41	.034*
Pre-test writing anxiety	1.081	1	41	.305
Post-test writing anxiety	.796	1	41	.378
Pre-test writing self-efficacy	5.495	1	41	.024*
Post-test writing self-efficacy	.058	1	41	.811
Pre-test writing self-consistency	.531	1	41	.470
Post-test writing self-consistency	.728	1	41	.399

* Significant at the 5% level ($p<0.05$)

4.3 Findings

The Mann–Whitney *U* test for two independent samples was calculated to determine whether or not there were any statistically significant differences in the ESL participants' writing self-beliefs, writing self-efficacy and writing process approach self-consistency in the two groups before implementing the TaskStream e-portfolio in order to provide baseline data. The test results (see Appendix J) showed that the p-values for writing self-beliefs, writing self-efficacy and writing process approach self-consistency were greater than the significance level found between the ESL participants in the control and experimental groups. These results indicate that there are no significant differences among the participants in terms of these three ESL learner self-

writing traits. Therefore, the post-implementation questionnaire data was analysed using the Mann–Whitney *U* test to answer the research questions as shown in the next section.

4.3.1 First research question: ESL learners' writing self-beliefs

The first research question investigates possible changes in the ESL participants' writing self-beliefs, measured in terms of the perceived value of writing, writing self-concept, and writing anxiety, following their use of the TaskStream e-portfolio. The following sections present the results obtained.

ESL learners' perceived value of writing

The post-test data analyses using the Mann-Whitney U test to evaluate changes in the learners' perceived value of writing are shown in Table 4.3. The results indicate a Z value of – 2.082 with a significance level of p = 0.037. Therefore, it can be concluded that there is a significant statistical difference in the ESL participants' perceived value of writing between the control and the experimental groups following the implementation of the e-portfolio (U = 148, Z = -2.082, P = 0.037). It can be further concluded that a statistically significant higher perceived value of writing is found in the e-portfolio group (mean rank = 25.9) compared to the conventional group (mean rank = 18.3).

Table 4.3 Mann-Whitney test for learners' perceived value of writing

	Mann-Whitney U test	Z-value	Asymp. Sig. (2-tailed)	Mean Rank		Effect Size
				cont	*expt*	***(d)***
Perceived Value of Writing	148	-2.082	.037*	18.3	25.9	0.49
Interest in Writing	152	-2.076	.038*	18.8	25.3	0.67
Importance of Writing	171.5	-1.57	.117	19.3	24.8	

* Significant at the 5% level ($p<0.05$)

A further investigation of the subthemes of the perceived value of writing shown in Table 4.3 revealed a significantly higher level of interest in writing with a P-value of = 0.038,and z = -2.076 in the e-portfolio group (mean rank = 25.3) than in the conventional group (mean rank = 18.8) after using TaskStream, (U = 152, Z = -2.076, P = 0.038) . No significant difference in the importance of writing was found between the participants in each group (p= 0.117). Figure 4.1 shows the distribution of data for the perceived value of writing and its sub-themes for the two groups.

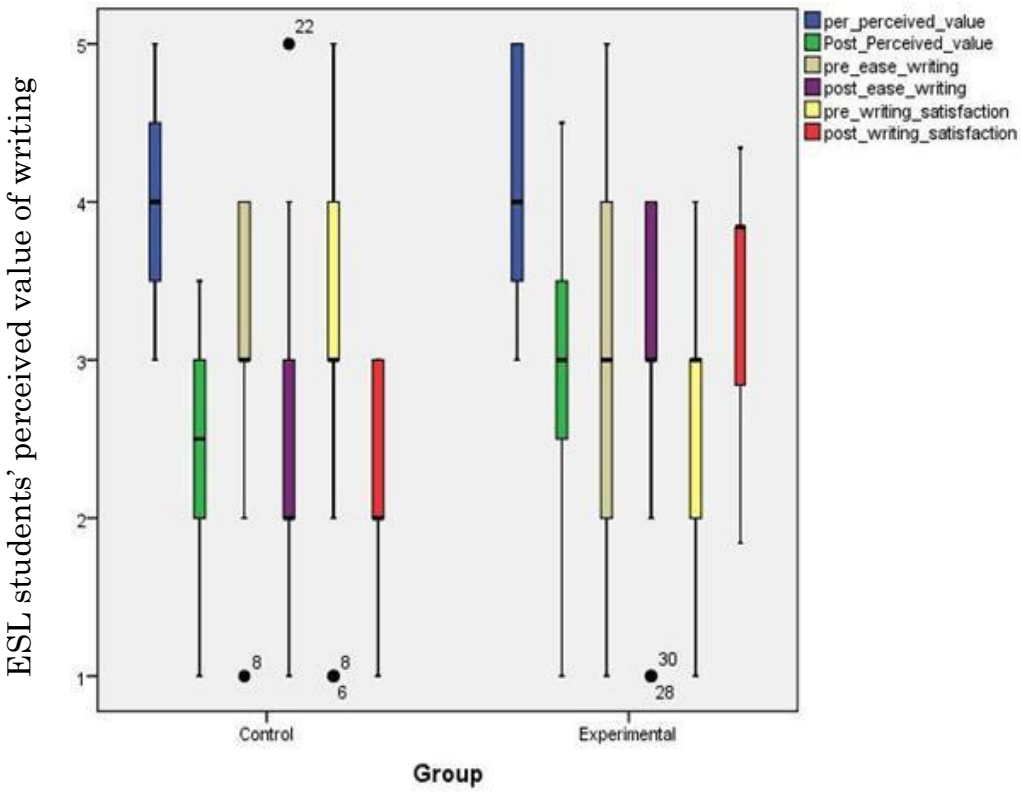


Figure 4.1 ESL learners' perceived value of writing data distribution

Knowing this significance level ($P < 0.05$) however, does not allow us further insight into the impact of TaskStream e-portfolio in the real language learning context, independently of the sample size and the measurement scales. In other words, we are looking for the magnitude of the impact of the independent variable (TaskStream) on the dependent variable (perceived value of writing) in this section. An effect size gives us insight into the size of this impact. Larson-Hall (2010) demonstrated that the calculation of an effect size estimate, *r*, is based on the following equation from Rosenthal's (1991) work on meta-analytical procedures for social research:

$$r = \frac{\mathrm{Z}}{\sqrt{\mathrm{N}}}$$

where the Z value is taken from the Mann-Whitney U test, and N represents the volume of data in the study (i.e. the number of total observations on which z is based). Then the effect size estimate, *r* is converted to Cohen's *d* value to allow us to interpret the scale of effect of the Taskstream e-portfolio use on the perceived value of writing. Cohen (1988) defined effect sizes for *d* as follows: *d* =0.2 is a small effect, *d* =0.5 is a medium effect, and *d* =0.8 is a large effect, and so the findings show that there is only a small effect size of the TaskStream e-portfolio on the learners' perceived value of writing, (*d* =0.49), and a medium impact on their interest in writing (*d* =0.67).

ESL *learners' writing self-concept*

The Mann-Whitney U test results to evaluate the change in learners' writing self-concept are shown in Table 4.4. The test gives a Z value of -1.990 at a significance level of p = 0.047, from which we can conclude a statistically significant difference between the conventional and e-portfolio groups following the implementation of the web-based portfolio on the ESL participants' writing self-concept (U = 149.5, Z = -1.990, P = 0.047). It also indicates statistically significant higher levels of writing self-concept beliefs among learners in the e-portfolio group (mean rank = 25.8) than their colleagues in the conventional group (mean rank = 18.4). A medium effect size of d=0.606 was then found in the e-portfolio ESL participants' writing

self-concept (mean rank = 25.8) compared with that of their colleagues in the conventional group (mean rank = 18.4).

Table 4.4 Mann-Whitney test for ESL learners' writing self-concept

	Mann-Whitney U test	**Z-value**	**Asymp. Sig. (2-tailed)**	**Mean Rank**		**Effect Size**
				cont	*expt*	***(d)***
Writing Self-Concept	149.5	-1.990	.047*	18.4	25.8	0.606
Ease of Writing	153.5	-1.961	.051	18.5	25.6	
Writing Satisfaction	155.5	-1.912	.046*	19.6	24.5	0.63

* Significant at the 5% level ($p<0.05$)

A further investigation was conducted into the learners' writing self-concept subthemes: ease of writing and writing satisfaction. Table 4.4 reveals a significant difference in writing satisfaction (z = -1.912, P-value of = 0.046), with a statistically significant higher level of writing satisfaction in the e-portfolio group (mean rank = 24.5) than in the conventional group (mean rank = 19.6). No significant difference in the ease of writing sub-theme was found among participants in each group (p= 0.051). A meduim size effect of using the TaskStream e-portfolio to encourage change in the experimental group participants' writing self-concept was found (d = .606), with a meduim

impact also on their writing satisfaction (d = .63). Figure 4.2 shows the distribution of the data for writing self-concept and its sub-themes for the two groups.

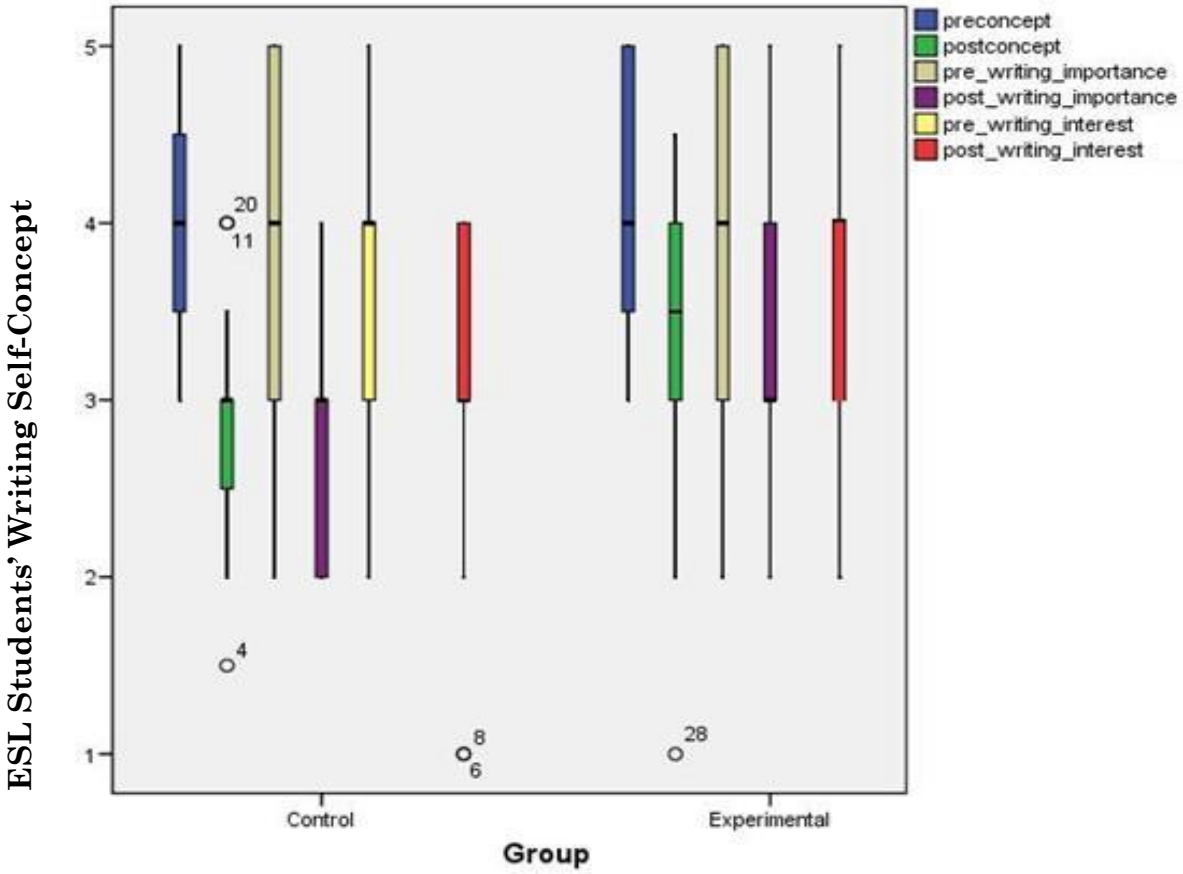


Figure 4.2 ESL learners' writing self-concept data distribution

ESL learners' writing anxiety

The post-intervention test data was statistically analysed using the Mann-Whitney U test, and the results are shown in Table 4.5.

Table 4.5 Mann-Whitney test for ESL learners' writing anxiety

	Mann-Whitney U test	Z-value	Asymp. Sig. (2-tailed)	Mean Rank	
				cont	*expt*
Writing Anxiety	179.5	-1.331	.183	24.4	19.7
Avoidance of writing	190	-1.044	.297	23.9	20.1
Assessment anxiety	191	-1.024	.306	25.7	18.4
Anxiety about writing	205	-.658	.510	23.2	20.8
Negative feedback Anxiety	161	-1.813	.070	25.6	18.6

The overall findings showed a Z value of -1.331 and a p-value of 0.183 which indicates no significant differences in students' writing anxiety between the two groups (U = 179.5, Z = -1.331, P = 0.183). Therefore, no impact on anxiety with regard to using the TaskStream e-portfolio was observed on the part of the experimental group learners. The findings also indicate no statistically significant difference for the writing anxiety sub-themes of avoidance of writing (0.297); assessment anxiety (0.306); anxiety about writing (0.510) and anxiety about negative feedback from peers (0.070). Figure 4.3 shows the distribution of data for the writing anxiety and its sub-themes for the two groups.

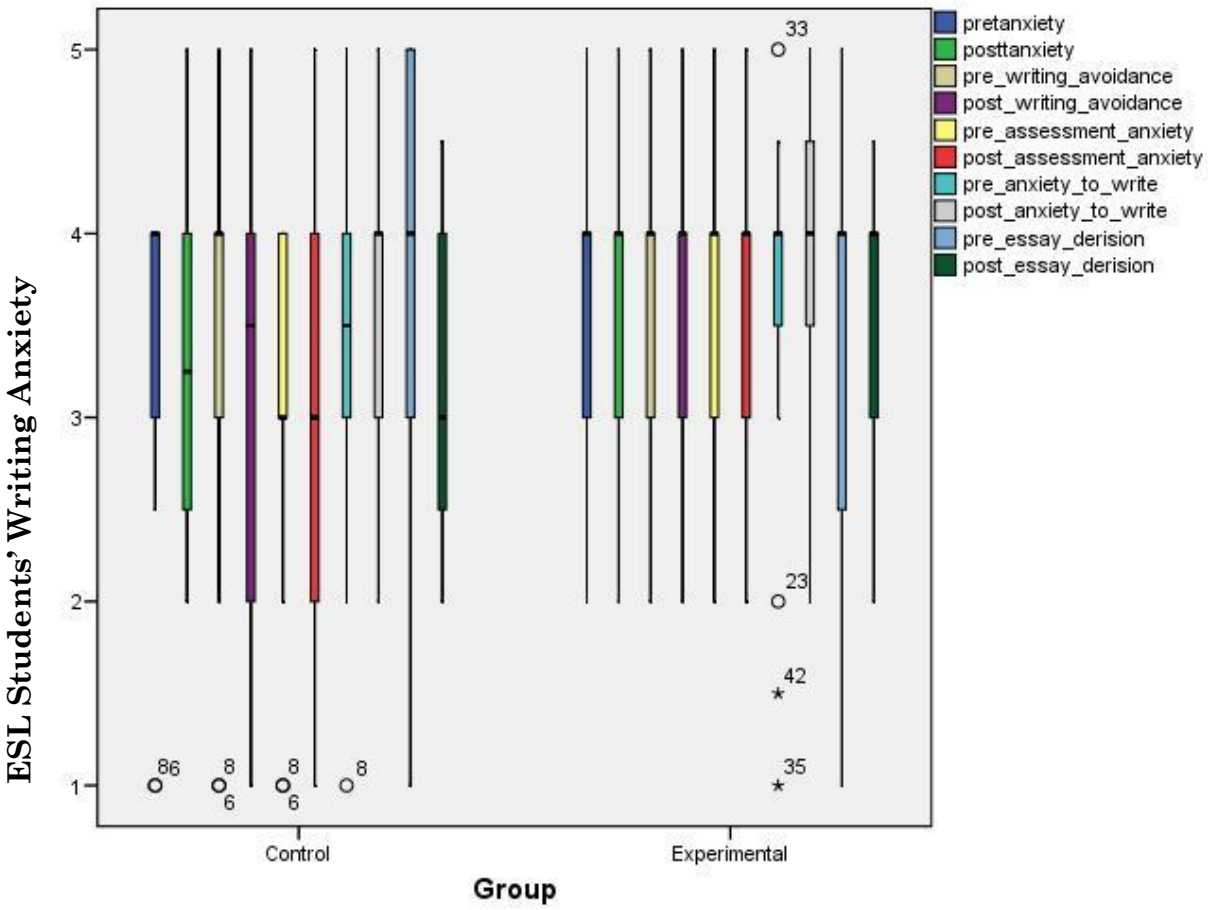


Figure 4.3 ESL learners' writing anxiety data distribution

4.3.2 Second research question: ESL learners' writing self-efficacy

Does utilizing a web-based learning platform encourage a change in ESL students' writing self-efficacy?

The answer to this question requires an investigation of the probability of change in the ESL students' writing content, organization, word choice, and the appropriate use of writing conventions in their writing before and after the use of the e-portfolio. A Mann-Whitney test was used to analyse the students' pre-test writing self-efficacy data, and the findings are presented

in Table 4.6, indicating no significant difference in writing self-efficacy levels between the convention and the e-portfolio group or in its subthemes of the writing content, organization, word choice, and the appropriate use of writing conventions.

Table 4.6 Mann-Whitney test for ESL learners' writing-self efficacy

	Mann-Whitney U	Z-value	Asymp. Sig. (2-tailed)
Pre-test writing self-efficacy	193.5	-.961	.337
Pre-test writing content	208.0	-.562	.574
Pre-test writing organization	221.5	-.235	.814
Pre-test writing word choice	221.0	-.252	.801
Pre-test writing Conventions	219.0	-.303	.762

A Mann-Whitney analysis of the post-test data findings shown in Table 4.7 yields a statistically significant *p*-value of 0.007 for the ESL students' writing self-efficacy (U = 124.5, Z = -2.705, P = 0.007, *d*= .75). findings for writing self-efficacy sub-themes further indicate statistical differences for content (0.0 32), organization (0.047),word choice (0.037), and the appropriate use of writing conventions (0.008) between the two groups.

Table 4.7 Mann-Whitney test for ESL learners' writing-self efficacy

	Mann-Whitney U test	Z-value	Asymp. Sig. (2-tailed)	Mean Rank		Size Effect
				Cont	*Expt*	*(d)*
Writing self-efficacy	124.5	-2.705	.007*	17.2	27	.75
Content	219	-2.147	.032*	18.8	26	.69
Organization	154	-1.985	.047*	18.5	25.6	.63
Word choice	149	-2.082	.037*	18.3	25.9	.67
Conventions	128	-2.646	.008*	17.3	26.9	.87

*. Significant at the 5% level ($p<0.05$)

Therefore significantly higher levels of beliefs about writing self-efficacy were found among learners in the e-portfolio group, both overall (mean rank = 27) and its subthemes, than those in the conventional group (mean rank = 17.2). The effect sizes of change in the e-portfolio group students' overall writing self-efficacy was medium(0.75) and the subthemes of writing content (0.69), organization (0.63), word choice (0.67). However, a high impact of the TaskStream e-portfolio was found in the use of appropriate writing conventions (0.87). Figure 4.4 shows the distribution of data on the writing self-efficacy and its sub-themes for the two groups.

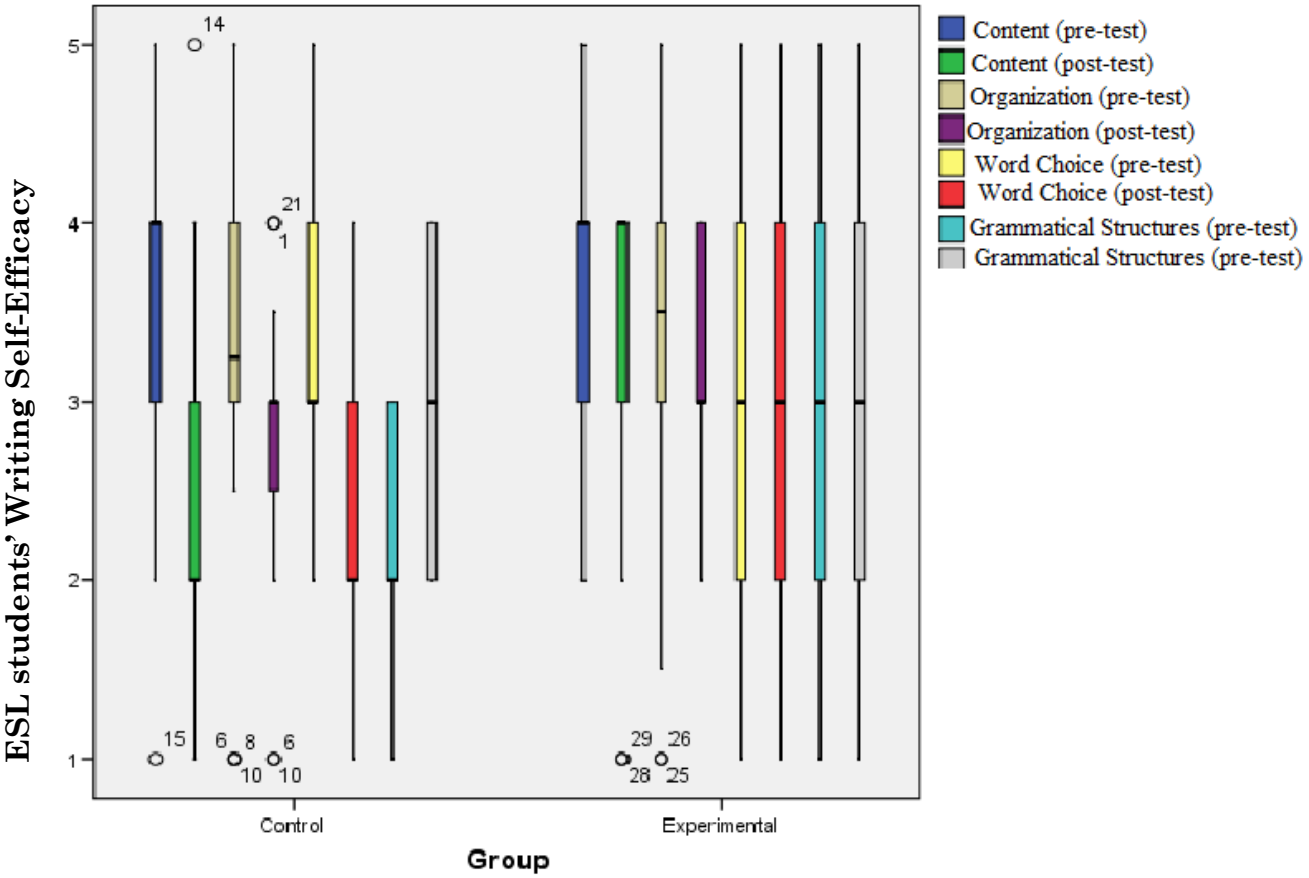


Figure 4.4 Data distribution of ESL students' writing self-efficacy

4.3.3 Third research question: ESL learners' self-consistency in applying a process approach to writing

Does utilizing a web-based learning platform encourage ESL students to consistently apply a process approach to writing?

The writing process consistency scale was designed to mirror the main stages of the writing process, and so the questionnaire items were grouped according to the three stages of planning, drafting and revision. Therefore this question is answered by investigating the consistency with which the

students claimed they applied the strategies which are generally linked to the process approach to writing, in each of these three stages. A statistical analysis of the pre-intervention test using the Mann-Whitney U statistic for each of the three stages in Table 4.8 shows no significant differences in the consistency with which learners in the conventional and e-portfolio groups claimed to apply the writing process approach.

Table 4.8 Mann-Whitney test for ESL learners' writing process self-consistency

		Mann-Whitney U	Z-value	Asymp. Sig. (2-tailed)
Stage	Pre-test writing self-consistency	217.5	-.352	.725
Planning phase	Pre-test define task	217.5	-.333	.739
	Pre-test writing plan essay	224.5	-.170	.865
Writing phase	Pre-test writing performing	204.5	-.686	.493
Revision phase	Pre-test writing self-monitor	229.0	-.306	.960
	Pre-test writing seeking feedback	227.5	-.087	.931
	Pre-test writing revision	219.0	-.304	.761

The post-implementation test findings presented in Table 4.9 however, give a Z value of -2.185 and a p-value of 0.029, which indicates a significant difference in the participants' consistency in applying the writing process approach between the conventional (*mdn* = 18.2) and the e-portfolio (*mdn* =

26) groups (U = 152, Z = -1.946, P = 0.029, d = .702). A meduim effect size (*d* = .702) in the e-portfolio group students' consistency in applying the writing process approach after using the TaskStream e-portfolio was identified.

Table 4.9 Mann-Whitney test for ESL learners' writing self-consistency

	Mann-Whitney U test	**Z-value**	**Asymp. Sig. (2-tailed)**	**Mean Rank**		**Size Effect (d)**
				cont	*expt*	
Writing process approach self-consistency	147.500	-2.185	.029*	18.20	15.98	.702
Planning Phase						
Define Goals	152	-1.946	.052	18.41	25.76	
Plan Tasks	134.5	-2.483	.013*	17.61	26.60	.82
Writing Phase	207.5	-.587	.557	20.93	23.12	
Revision Phase						
Monitoring Writing	147.5	-2.117	.034*	18.20	15.98	.67
Seeking Feedback	150	-2.012	.044*	18.32	25.86	.65
Making Change	195.5	-.945	.345	20.39	23.69	

* Significant at the 5% level (p<0.05)

A further analysis of the three different stages shows a significant difference (p=0.013) in planning writing tasks between the control (*mdn* = 17.6) and the experimental (*mdn* = 26.6) groups (U = 134.5, Z = -2.483, P = 0.013, d = .82). A large effect size (0.82) was found in the experimental group students' self-consistency in applying the planning strategies after using the TaskStream e-portfolio. No significant difference (0.55) was found however, in the consistency with which students in the two groups claimed to go through the drafting phase as part of their writing tasks. The findings also indicated statistically significant differences in consistency among the students' claims about monitoring their writing development (0.034) and seeking feedback from peers, external reviewers, and their teacher (0.044) in the revision phase of the writing process. These results show medium effects in the e-portfolio group participants' claimed use of strategies to monitor and self-evaluate their writing development (0.67), and in seeking feedback (0.65). No significant difference in making appropriate changes was observed between the two groups. Figure 4.5 shows the distribution of data in terms of the participants' consistency in applying the writing process approach, and its sub-themes for the two groups.

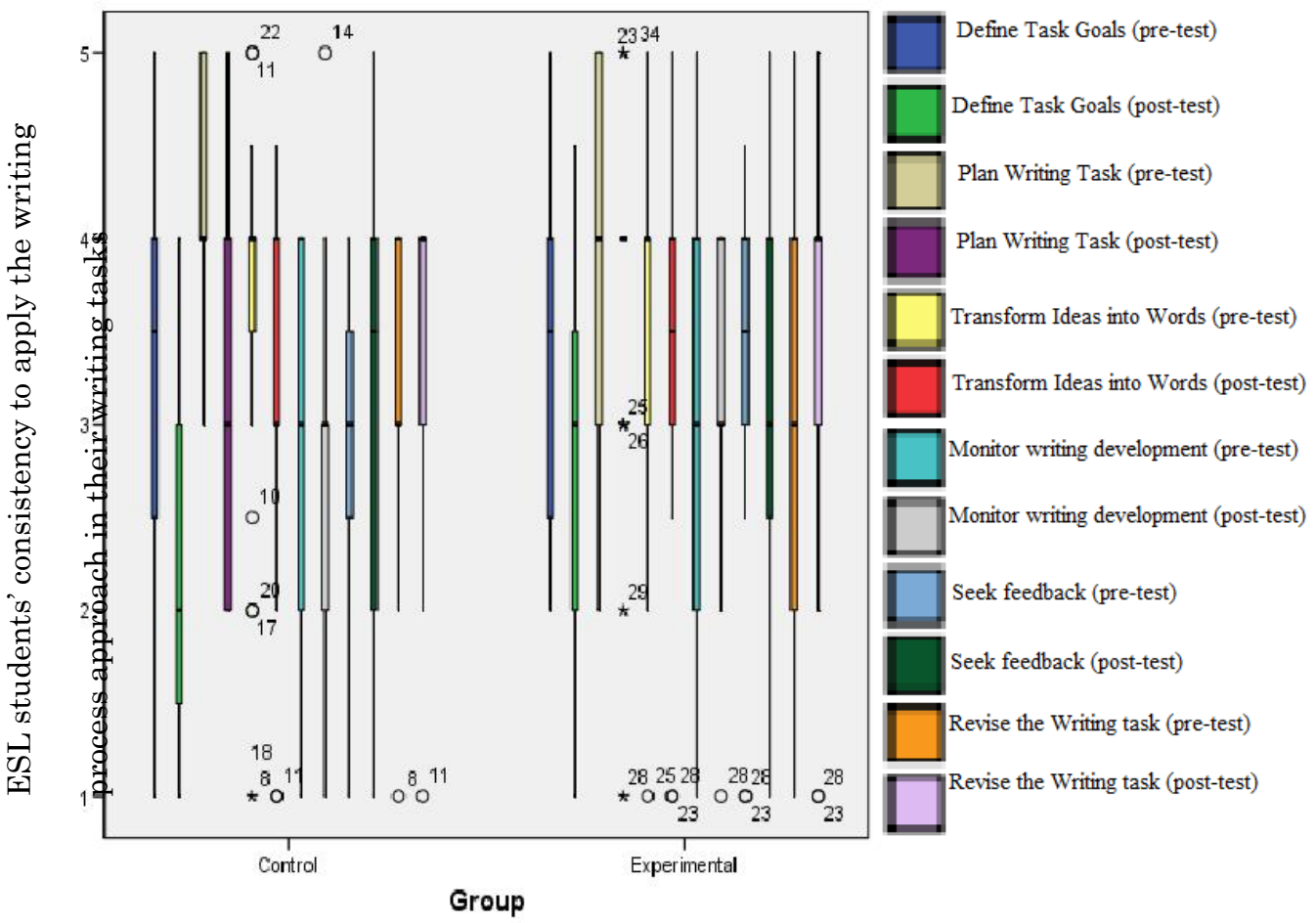


Figure 4.5 Data distribution of ESL students' consistency in applying the writing process approach in writing tasks

However, we still need to find out which of the different writing strategies were used most by the learners in the experimental group after using TaskStream. Figure 4.6 indicates that most learners in the e-portfolio group used meta-cognitive strategies while performing their writing tasks, followed by cognitive and then communicative strategies. Social/affective strategies and then rhetorical strategies were the least frequently used.

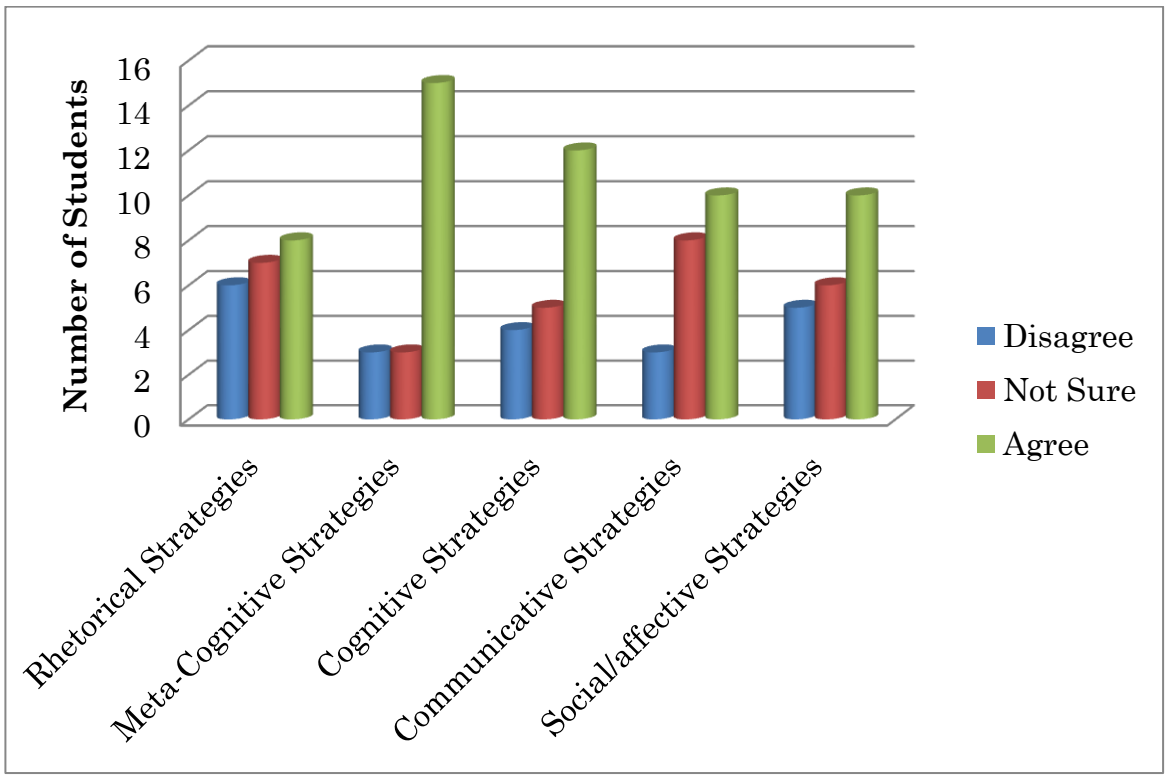


Figure 4.6 E-portfolio group students' use of writing strategies

A further analysis of the meta-cognitive strategies indicated that planning strategies were the most used, with evaluation and monitoring following respectively. Cognitive strategies of revision, elaboration and rhetorical strategy of organization were among the commonly used strategies in terms of organization.

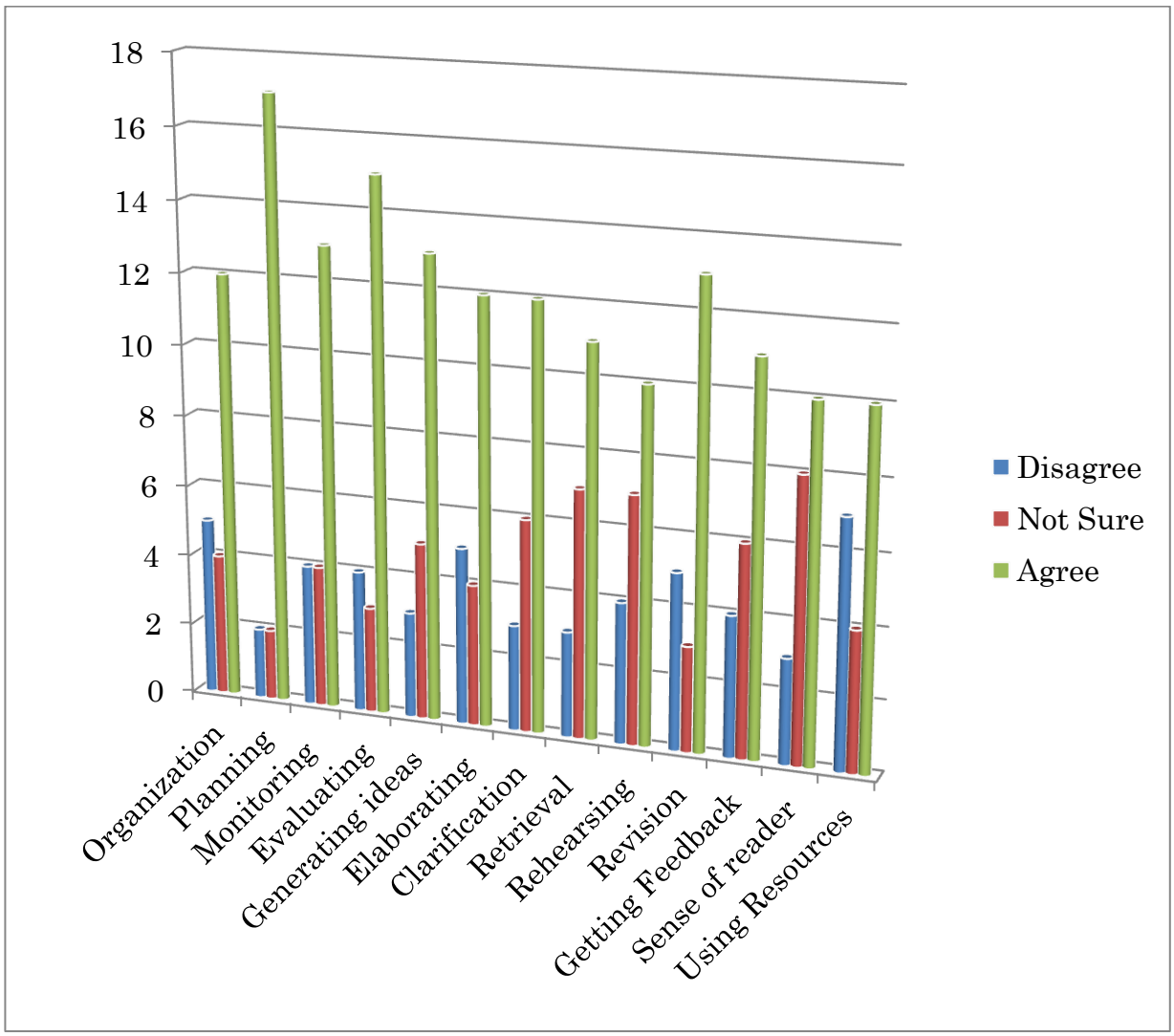


Figure 4.7 E-portfolio students' use of particular writing strategies

4.4 ESL students' overall writing performance

Is there a change in ESL students' overall writing performance after utilizing a web-based learning platform in their writing course?

4.4.1 Writing scores distribution

The holistic writing scores of all participants in the pre- and post-tests were graphically represented, and then statistically tested to confirm whether or

not the data was normally distributed. Visual assessment of the histogram graphs in Figure 4.8 suggests that the writing scores of all students approximate a normal distribution.

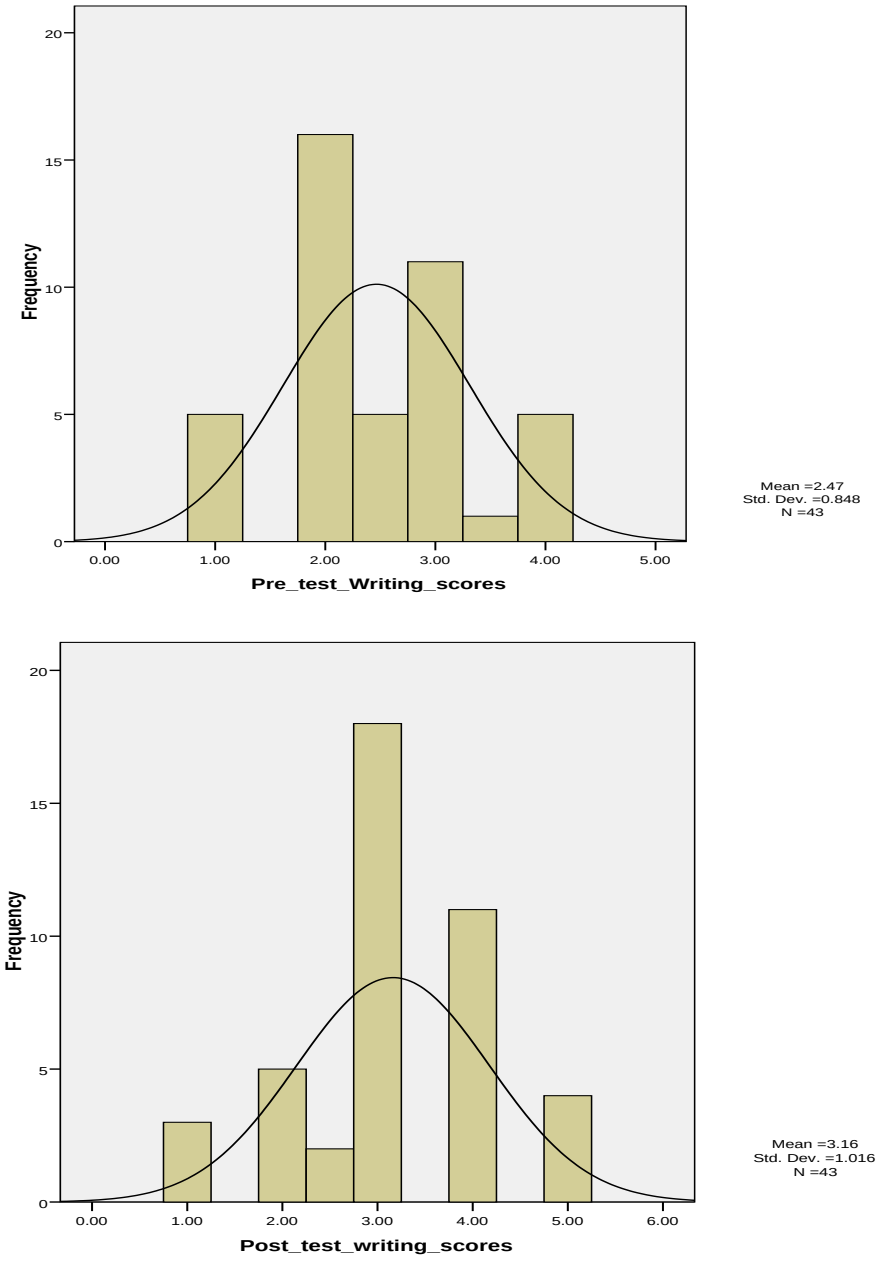


Figure 4.8 Writing scores distribution

The Shapiro-Wilk test results presented in Table 4.10 indicate that the *p values* are greater than 0.05, and therefore the data is considered to be normally distributed.

Table 4.10 Writing tests scores tests of normality

		Shapiro-Wilk		
Writing sample	Test groups	Statistic	df	Sig.
Pre-test	Conventional	.914	22	.058
	E-portfolio	.913	21	.063
Post-test	Conventional	.939	22	.185
	E-portfolio	.919	21	.084

Therefore, an independent t-test for the two samples was used to detect statistical differences in the writing scores between the two groups.

4.4.2 Writing samples holistic rubric scores

From Table 4.11, the p-values from Levene's test of 0.89 and 0.97 are greater than the chosen significance level, so the variances of the variables for the two groups are considered equal. This finding confirms the normal distribution of the writing scores.

Table 4.11 T-test values of the writing sample scores

Writing sample					Levene's Test for Equality of Variances		t-test for Equality of Means		
	Test groups	N	Mean	SD	F	Sig	t	df	Sig. (2-tailed)
Pre-test	Conventional	22	2.6	.85007	.019	.89	.62	41	.539
	E-portfolio	21	2.4	.85818					
Post-test	Conventional	22	2.6	.88884	.001	.97	4.0	41	.0001
	E-portfolio	21	3.7	.84515					

* Significant at the 5% level ($p < 0.05$)

The t-test results show no significant differences ($p > .05$) in the pre-test writing scores between the participants in the conventional group and in the e-portfolio groups prior to the implementation of the TaskStream e-portfolio. But a statistically significant difference ($p > 0.0001$) is found in the writing score means of the participants in the two groups (3.7) following the implementation of the e-portfolio. It was then necessary to determine the size of the impact of TaskStream (the independent variable) on writing performance (the dependent variable). Using the effect size calculator Excel

file from Emory University (see Appendix K), a large effect size (d=.81) was found in the e-portfolio group's writing performance after using the e-portfolio software. But, we still needed to find out which of the different writing product skills improved more after using the TaskStream e-portfolio. Therefore, the writing samples analytical scores were analysed next.

4.4.3 Writing samples analytical rubric scores

Graphical representations and statistical tests of the scores for writing samples, to see if the data were normally distributed, were carried out. The Shapiro-Wilk test result presented in Table 4.12 indicates that the p values for most scores were less than 0.05, and therefore, the data is considered not to be normally distributed.

Table 4.12 Writing analytical scores normality test

Writing Skills	Group	Shapiro-Wilk		
		Statistic	df	Sig.
Content	Conventional	.855	22	.004*
	E-portfolio	.897	21	.030
Organization	Conventional	.889	22	.018
	E-portfolio	.860	21	.006*
Word choice	Conventional	.872	22	.009
	E-portfolio	.917	21	.074
Conventions	Conventional	.930	22	.124
	E-portfolio	.919	21	.084

* Significant at the 5% level ($p<0.05$)

The Q-Q normal probability chart in Figure 4.9 with regard to the conventional group scores for conventions shows that the data points are scattered away from the straight line, confirming that this data is not normally distributed.

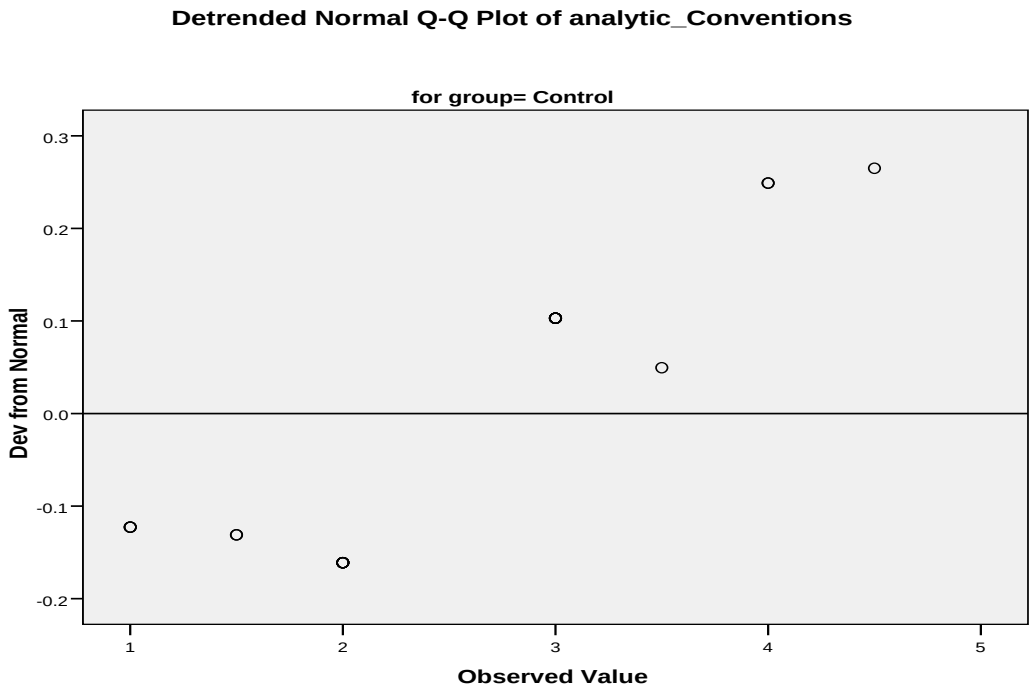


Figure 4.9 Q-Q normal chart of control group conventions scores

Therefore, the Mann-Whitney *U* test was used to determine if the e-portfolio group outperformed the conventional group in writing product skills.

Table 4.13 shows the writing performance of the ESL students with regard to each of the writing product skills in the post-intervention test.

Table 4.13 Mann-Whitney test values for the writing sample scores

	Mann-Whitney U	Z-value	Asymp. Sig. (2-tailed)*	Mean Rank Cont	Mean Rank Expe	Effect size (d)
Content	131.5	-2.512	.012	17.5	26.7	.79
Organization	134.5	-2.417	.016	17.6	26.6	.77
Word Choice	142.5	-2.221	.026	18	26.2	.69
Conventions	114.0	-2.946	.003	16.7	27.5	.98

* significant at the 5% level ($p<0.05$)

Table 4.13 also indicates statistically significant differences in each of the four writing product skills. It can be further concluded that higher average scores were found with regard to the e-portfolio group for each of the four writing product skills, with mean ranks ranging from 26.2 to 27.5, compared to the conventional groups' mean ranking of between 16.7 to 18. Medium effect sizes of improvements in the e-portfolio students writing product skills were found for content (0.79), organization (0.77) and word choice (0.69), with a large effect for their use of appropriate conventions (0.98). Figure 4.10 shows the distribution of the writing product skills scores for each group of students.

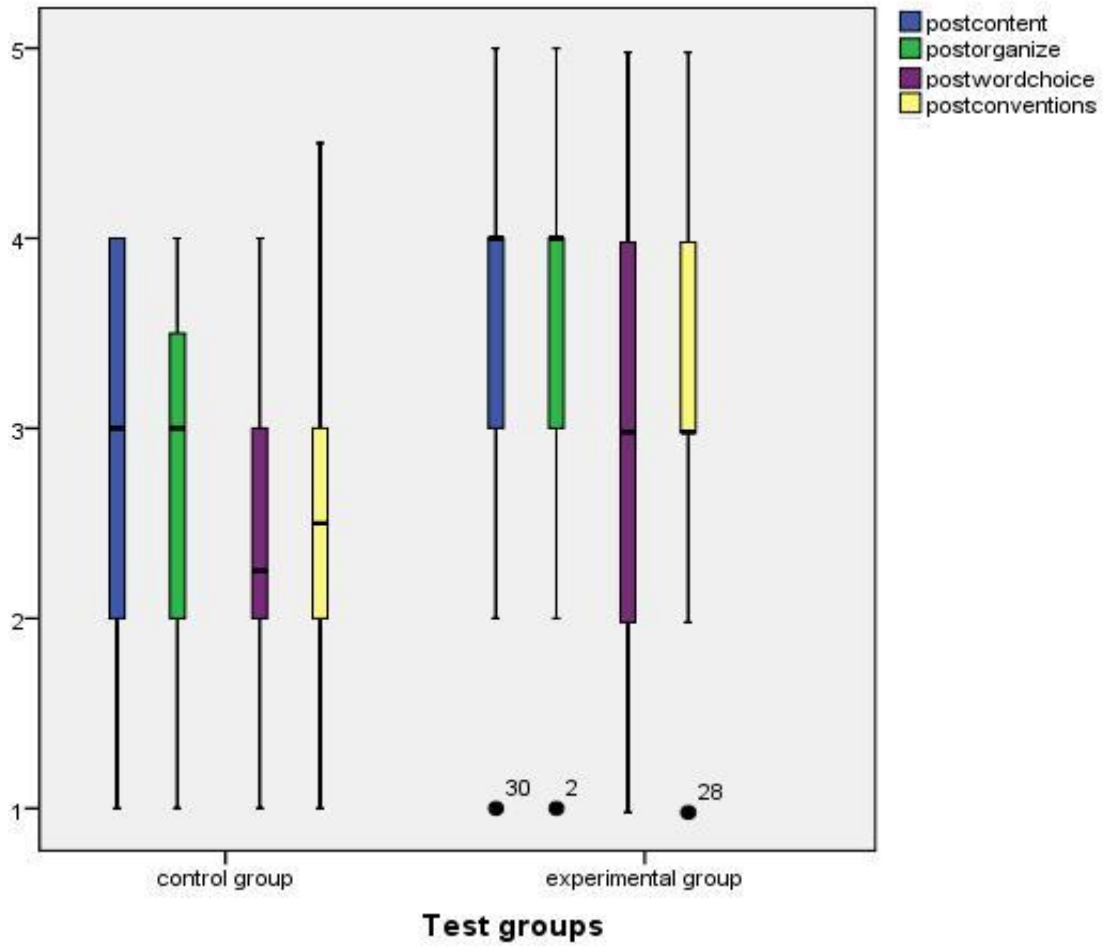


Figure 4.10 Data distribution of ESL students' writing aspects

4.5 Relationship between ESL students' writing psychological traits and their writing performance

The next step in the analysis was to find out the level of correlation between the three psychological items and writing performance outcomes. To examine the relationship between pairs of ordinal variables (the three psychological traits) and the interval variable (test results), the Spearman correlation (Spearman's rho (ρ)) was computed (Bryman and Cramer 2005). Correlation analysis of the pre-intervention test data revealed no significant

correlations between writing self-efficacy, writing process self-consistency and writing performance outcomes, as shown in Table 4.14. This table indicates very low, non-significant negative correlations between writing self-concept and writing anxiety (-0.022) or writing self-efficacy (-0.042), between the perceived value of writing and writing process self-consistency (-0.104) and between the perceived value of writing and writing performance (-0.064).

Table 4.14 Correlation analyses of the pre-intervention test data

Spearman's rho (ρ)		Writing performance outcomes	Writing perceived value	Writing self-concept	Writing anxiety	Writing process self-consistency	Writing self-efficacy
Writing performance (post-test)	Correlation Coefficient	1.000					
	Sig. (2-tailed)	.					
Perceived value of writing	Correlation Coefficient	-.064	1.000				
	Sig. (2-tailed)	.684	.				
Writing self-concept	Correlation Coefficient	.017	.279	1.000			
	Sig. (2-tailed)	.915	.070	.			
Writing anxiety	Correlation Coefficient	.028	.037	-.022	1.000		
	Sig. (2-tailed)	.859	.812	.891	.		
Writing process self-consistency	Correlation Coefficient	.006	-.104	.028	-.168	1.000	
	Sig. (2-tailed)	.970	.506	.858	.283	.	
Writing self-efficacy	Correlation Coefficient	.108	.007	-.042	. 120	.228	1.000
	Sig. (2-tailed)	.489	.965	.790	.443	.141	.

For post-test data, the findings in Table 4.15 show that the correlation between writing performance and the perceived value of writing is very strong (r = .823, p = .0001 and n = 43). Cohen (1992) defined effect sizes for correlation coefficients in terms of R^2, where R^2 = 0.01 is a small effect, R2 = 0.09 is a medium effect, and R2 = 0.25 is a large effect. The findings show a weak relationship between writing performance and writing self-concept, writing self-efficacy and writing process self-consistency (0.419, 0.629, 0.560, respectively). A weak inverse relationship was also noted between writing anxiety and writing performance (-0.51),and weak relationships were indicated between writing self-efficacy and writing self-concept, perceived value of writing and writing process self-consistency (0.349, 0.331, 0.372, respectively). A strong inverse relationship was further noted between writing anxiety and writing self-efficacy (-0.91).

Table.4.15 Correlation analyses of the post -intervention test data

Spearman's rho		Writing performance	Writing perceived value	Writing self-concept	Writing anxiety	Writing process self-consistency	Writing self-efficacy
Writing performance (post-test)	Correlation Coefficient	1.000					
	Sig. (2-tailed)	.					
Perceived value of writing	Correlation Coefficient	.823(**)	1.000				
	Sig. (2-tailed)	.000	.				
Writing self-concept	Correlation Coefficient	.419(**)	.077	1.000			
	Sig. (2-tailed)	.005	.622	.			
Writing anxiety	Correlation Coefficient	-.510(**)	.153	.206	1.000		
	Sig. (2-tailed)	.000	.329	.186	.		
Writing process self-consistency	Correlation Coefficient	.619(**)	.154	.017	.202	1.000	
	Sig. (2-tailed)	.000	.193	.914	.324	.	
Writing self-efficacy	Correlation Coefficient	.560(**)	.331(*)	.349(*)	-.911(**)	.372(*)	1.000
	Sig. (2-tailed)	.000	.030	.022	.003	.014	.

*Correlation is significant at the P<0.05 level (2-tailed).

**Correlation is significant at the P<0.01 level (2-tailed).

4.6 TaskStream E-portfolio data

The data in Figure 4.11 shows that 22 accounts were created in the ESL writing 2010 course. 21 students used the TaskStream e-portfolio system to submit their first drafts, receive their teacher's feedback and suggestions, revise their writing, and then submit the final draft of their writing tasks.

One participant did not submit his work, and withdrew from the study at the end of the third week.

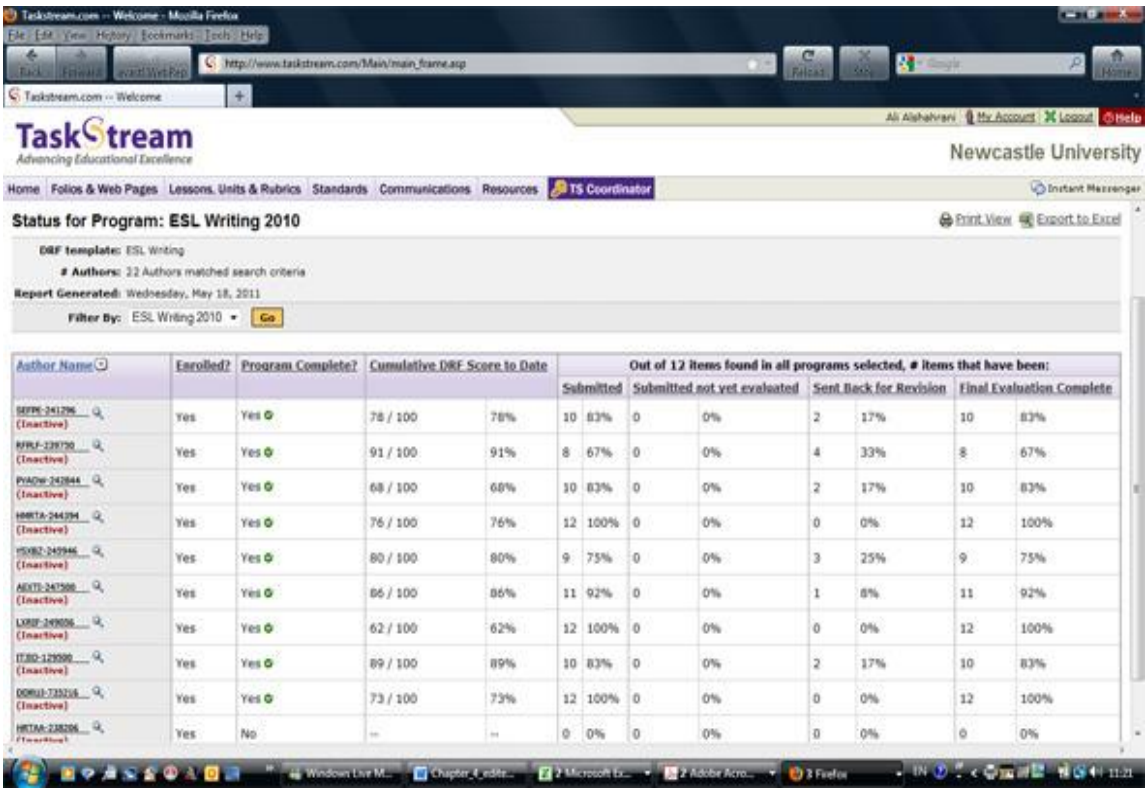


Figure 4.11 TaskStream ESL writing course status report

The participants used the TaskStream e-portfolio during the 14 weeks of the study. Figure 4.12 shows that they accessed the e-portfolio an average of seventy-six times per week (ranging between 34 and 137 times), and at a rate of three times per week per participant, which is considered a good use of the web-based portfolio (Cotterill et al. 2010). The figures also indicate higher access frequency during the weeks allocated for the final submission of drafts (weeks 3, 5, 7, 9 and 12) than in other weeks. Also, a sharp drop

was observed in the final week, when they had submitted their term project writing assignment.

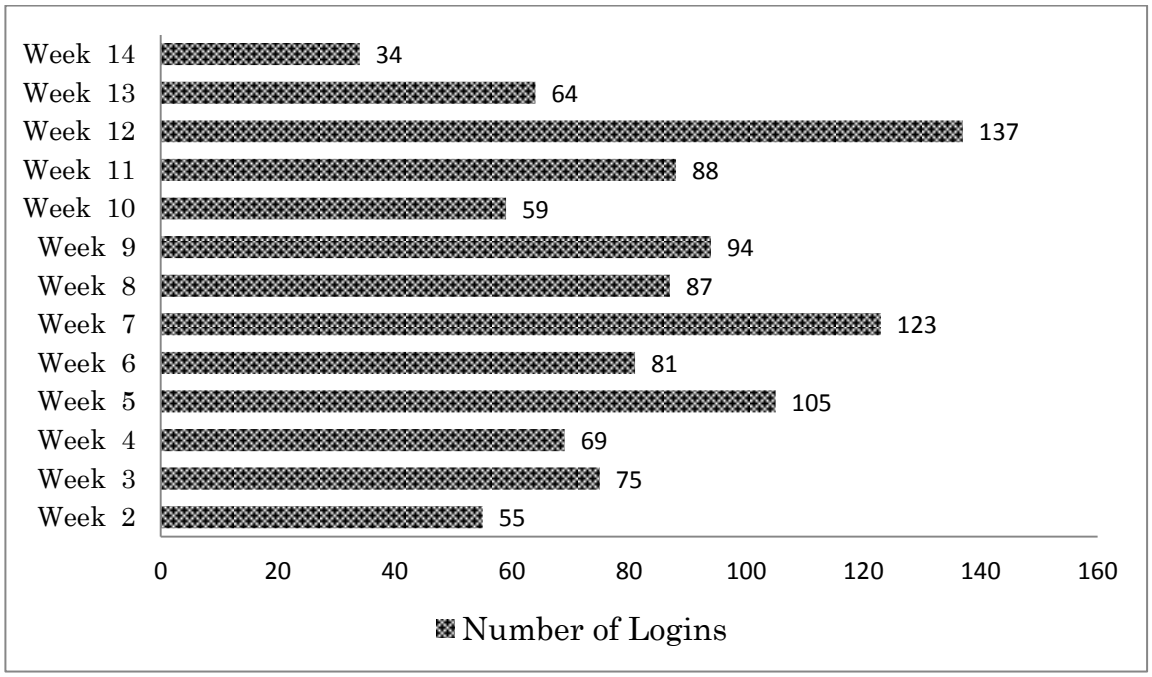


Figure 4.12 Number of student accesses to the TaskSteam e-portfolio

The log-in files data shown in Figure 4.13 indicate that students visited the vocabulary page the most, followed by the planning, generating ideas, and revision strategies pages, respectively. The data also indicate that students visited grammatical structures pages rather more often than the organization page. Students also used check the checklist pages for self, and peer assessment writing forms, but accessed the Useful Links page to check the newly added materials more often than they viewed the essay writing models. The page for scoring criteria was the least visited page in the course resource folio.

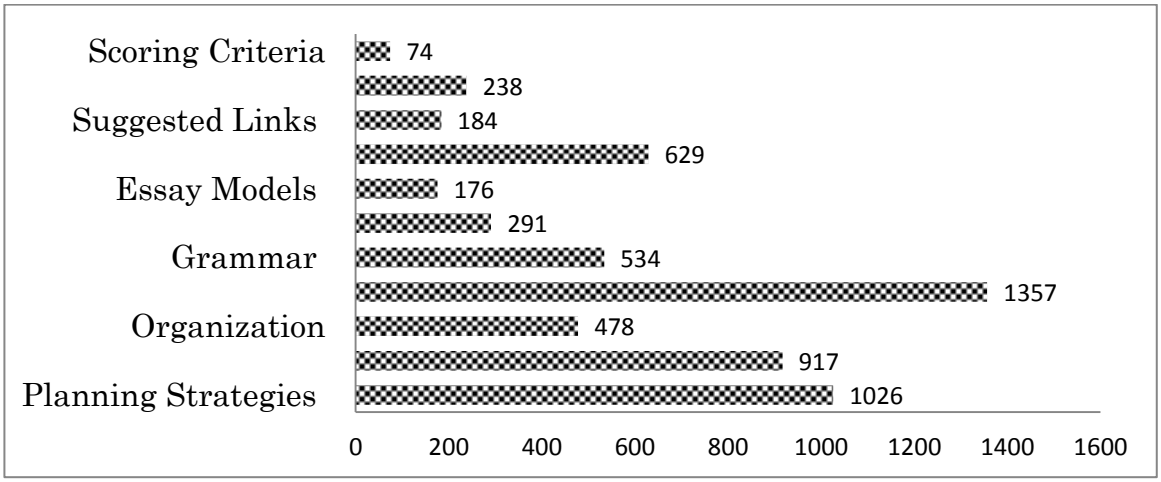


Figure 4.13 Student access to TaskSteam e-portfolio resource pages

The TaskStream e-portfolio generates a summary report of students' shared work as shown in Figure 4.14, revealing a gradual increase in the percentage of authors (students) sharing their work from week to week as they collaboratively worked on writing assignments within their four small groups.

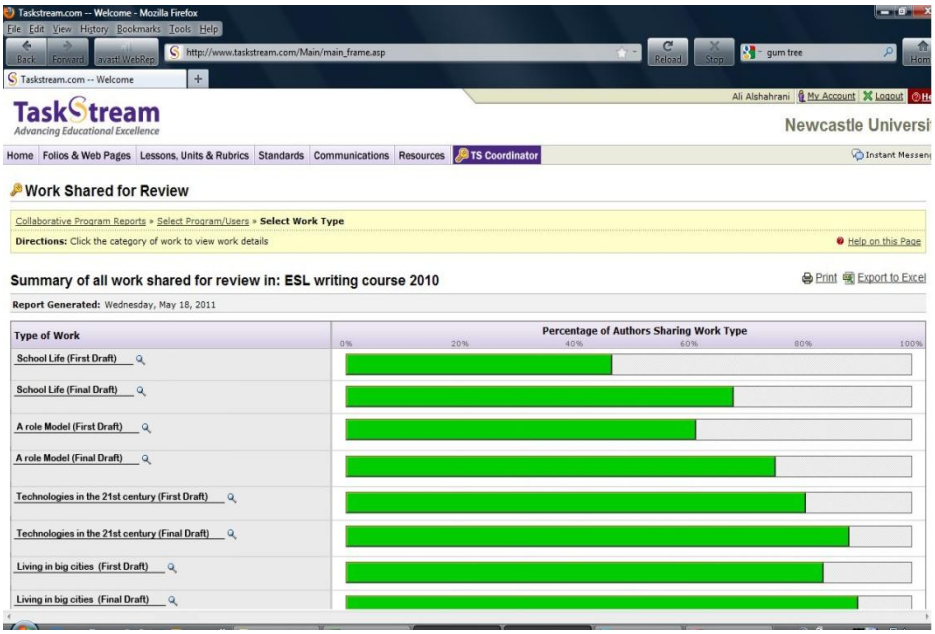


Figure 4.14 TaskSteam e-portfolio report of work shared for review

4.7 Chapter summary

The results of the statistical analysis of quantitative data collected from the online questionnaire and the students' writing samples at the beginning of the study, show no significant differences between the participants in the two groups. However, the analysis of the questionnaire data collected following the implementation of the web-based learning platform, revealed significant increases among students in the experimental group in their levels of the perceived value of writing, writing self-concept, writing self-efficacy and writing process approach self-consistency. However, no significant differences in writing anxiety were observed.

The analysis of the post-implementation writing samples showed significant differences in the experimental group of ESL participants in their holistic scores and in their writing aspects in terms of content organization, word choice and use of conventions. The results also showed meduim effect sizes in the experimental group participants' writing performance, and in their four writing aspects.

Participants accessed the e-portfolio at an average of seventy-six times per week (ranging between 34 to 137 times), which may be considered a good level of use of the web-based portfolio. The log-in file data indicate that students visited the vocabulary page the most, followed by the planning, generating ideas, and revision strategies pages respectively. The TaskStream e-portfolio reveals a gradual increase in the percentage of authors (students) sharing their work from week to week as they collaboratively worked on writing assignments.

Chapter 5: Qualitative research results

5.1 Overview

This chapter aims to explore the ESL participants' perceptions concerning writing self-concept, the perceived value of writing, writing anxiety, writing self-efficacy and writing process approach self-consistency, prior to the intervention and following the implementation of TaskStream as a web-based learning portfolio. This exploration is carried out by means of a thematic analysis of two sets of interview data. Examining the participants' beliefs and perceptions during these two stages allows the identification of any changes in the writing psychological traits. The procedure used for thematic analysis of the interviews is presented in Section 5.2. The themes resulting from this analytical process are presented in Sections 5.3 and 5.4. The themes discussed in Section 5.3 were the study's predefined themes. Section 5.4 introduces the themes that emerged during the second interview sessions following the implementation of the web-based learning portfolio.

5.2 Thematic analysis of interviews procedure

Two in-depth interview sessions were conducted with each of six ESL students from the experimental group who participated in the study. The first interviews sought further clarification of the participants' questionnaire responses concerning writing self-concept, the perceived value of writing, writing anxiety, writing self-efficacy and writing process approach self-

consistency. These interviews took place in the second week of the study, and lasted 50 minutes each. The second interview then investigated any changes in the students' answers in the post-treatment questionnaires concerning the writing psychological traits and the process approach, following the implementation of the TaskStream e-portfolio. These 50 minute-interview sessions took place during the last week of the study. The recorded interviews were transcribed and then read through several times to obtain a sense of the whole. Then, each interviewee received an English translation of his/her interview to review and approve for use in this study. A process of thematic analysis was employed to develop an understanding of, and meaning from, the data, and to identify pre-defined and emerging themes in explaining the social phenomena under investigation.

The thematic analysis entailed reading and re-reading all of the transcriptions to identify an initial set of themes or categories. The data were systematically searched for recurring patterns and items of interest, as well as views that were unusual, noteworthy or contradictory. Then the related experiences of the participants were extracted, and brought together into one text, which constituted the unit of analysis. Each unit was analysed deductively and inductively through many stages to determine the themes or categories. The findings revealed two sets of themes. The first set represented the study's predefined themes drawn from the research questions and from data collection instruments such as the questionnaire and the results of the analysis of the writing documents (deductive analysis). The second set corresponded to the themes which emerged after the

implementation of the web-based learning tool (inductive analysis). For ethical purposes, while referring to the participants, this paper assigns numbers instead of their actual names. The overall process of analysis that I followed is illustrated in Figure 5.1.

Figure 5.1 Interview thematic analysis process

5.3 The study's pre-defined themes

From the research questions, five themes were pre-defined concerning the ESL students' writing in English: *writing self-concept*, *perceived value of writing*, *writing anxiety, writing self-efficacy in English*, and *writing process approach self-consistency*. These themes are explained in the following sections.

5.3.1 Theme one: writing self-concept

This theme consists of two sub themes: ease of writing and writing satisfaction.

Ease of writing

The ESL participants admitted to finding it difficult to write in English, both in advance of, and following, the intervention in the study. In the first interviews, they described writing as a "difficult" task which they "struggled" with (interviewees 1, 2, 3 and 5), which led some students to focus more on other skills in English Language:

> At the beginning of my study in the English Language programme, I faced the difficulty of writing but I forced myself to learn how to write and talked with my teachers in the first level. They advised me to learn vocabulary as much as possible, to listen to the language on the radio and talk to people outside the classroom. Therefore, I focused on speaking and learning vocabulary and grammar structures, and ignored writing.

(Excerpt 1. Interviewee 1, pre-treatment interview)

The participants' beliefs about the ease of writing did not change following the implementation of the web course. They still viewed writing as a difficult

skill that requires knowledge of different styles and strategies, and which involves practice in the different stages of the writing process.

> Writing is difficult, even after the website helped me to learn a lot about the steps of the writing process and the different writing styles and strategies. Now, before I write a single word, I have to brainstorm my ideas and put them in a table, which takes a long time and gives me a headache.

(Excerpt 2. Interviewee 2, post-treatment interview)

They recognised the need to know a great deal of vocabulary in order to write a good academic essay, as illustrated in this two excerpts from the ESL students' second interview sessions:

> The website assisted me in getting more information about the stages of the writing process and giving examples of different writing styles. It also has a link to the academic phrase bank that helped me in preparing for my IELTS writing. But working on writing assignments is still difficult and I'm still struggling to master it.

(Excerpt 3. Interviewee 2, post-treatment interview)

Writing satisfaction

The interviewees expressed their dissatisfaction with their writing during the first interview. The ESL students attributed their displeasure with their writing to their slow progress, and to the teaching materials used in their writing course:

> This is my third writing course since I came to the United Kingdom seven months ago, and I feel that my writing ability is my least developed skill… All they teach us is to write about a personal experience, or about the importance of technology.

(Excerpt 4. Interviewee 6, pre-treatment interview)

> I learnt to write in general English but not [in] academic writing. I

have no idea about academic writing and I'm really very worried.

(Excerpt 5. Interviewee 4, pre-treatment interview)

After the intervention, changes in the interviewees' views of their writing satisfaction were perceived. They attributed this to the content of the posted materials that covered different writing styles, stages of the writing process, grading criteria, checklists and examples. As participant 3 mentioned:

> Well, from the website, I focus on ideas first not spelling and grammatical structures as I used to do before, and to check the materials available in the resources section whenever I need to do a writing assignment. I started to get higher grades than before after using the Taskstream website.

(Excerpt 6. Interviewee 3, post-treatment interview)

The e-portfolio hyperlinks to academic writing websites helped in answering some of the students' concerns, as shown in this excerpt:

> …I learned which writing styles to use, to check examples and useful academic writing websites to get an idea of what good writing assignment looks like.

(Excerpt 7. Interviewee 6, post-treatment interview)

5.3.2 Theme two: perceived value of writing

This theme contains two sub-themes: the importance of writing in English and interest in writing in English.

Importance of writing

The interviewees were conscious of the importance of writing in interviews both before and following the introduction of the electronic web course. They considered it as the most important of all the English language skills. They

viewed writing as the "melting pot" of the other language skills:

> Writing is the most important skill. It is like a melting pot of the English language skills of reading, listening, and speaking. So if I master it I will do well in my studies.

(Excerpt 8. Interviewee 1, pre-treatment interview)

Students consider writing as the "main pillar" of their academic and future career success (interviewee 4) through which they can present and explain their ideas to a wider selection of readers:

> Writing is the only channel available to present my ideas and explanations while [doing] my assignments and projects.

(Excerpt 9. Interviewee 5, pre-treatment interview)

Interest in writing

The ESL participants showed a lack of interest in writing in the pre-intervention interview. They related this attitude to the methods that had been used to teach them writing:

> All I have to do is to memorize general statements that can be used in most topics. Just change what is needed.

(Excerpt 10. Interviewee 2, pre-treatment interview)

They also blamed lack of sufficient knowledge about different writing strategies and styles, as indicated in the following quotation:

> …My teachers in my secondary school and university undergraduate English courses did not teach me the principles and strategies of writing. I just have to memorize the texts to pass the exam.

(Excerpt 11. Interviewee 2, pre-treatment interview)

Willingness on the part of students to express their opinions about their

colleagues' assignments could be identified following the implementation of TaskStream:

> TaskStream helps me to write more and then send it [essay] to a small group of trusted colleagues to check my work and give me feedback.

(Excerpt 12. Interviewee 2, post-treatment interview)

Also students become willing to share their experiences, as participant 4 mentioned:

> I learned the basics of how to write an essay but was still not interested in writing. However, I did want to share my experiences with other classmates in our small peer reviewing group.

(Excerpt 13. Interviewee 4, post-treatment interview)

5.3.3 Theme three: writing anxiety

The ESL participants' overall responses reflected no great changes in their worries about writing, before and after the intervention. The majority commented that, despite their increased levels of knowledge about writing patterns and strategies, they still felt "panic" and "nervous" (interviewees 3, 5 and 6) while performing their writing:

> I still feel worried and stressed while writing my essays. I use the website but I feel uncomfortable. Maybe this is because I feel I will get a low grade.

(Excerpt 14. Interviewee 4, post-treatment interview)

Other participants commented that writing is difficult and takes time and effort, as in the following excerpt:

> Writing is a tough process. It needs lots of effort and time. It takes me many hours to write one page but I still feel uncomfortable and worried whenever I have to write.

(Excerpt 15. Interviewee 1, post-treatment interview)

Anxiety in assessing their writing

A slight change can be observed in the ESL participants' levels of anxiety about writing assessment in the second interviews following the use of the TaskStream e-portfolio. One-third of the participants indicated that they felt calm about the fact that their writing was going to be assessed after using the web course. For instance:

> I feel more confident now that I will get a good grade. I use the resource sections to see which patterns suit my assignment, try to take time in planning my ideas and vocabulary then write and send it to my peer reviewing group and look for their opinions of my ideas. Then I use the checklist to check common grammatical errors, then submit my assignment.

(Excerpt 16. Interviewee 6, post-treatment interview)

However, most students in both the pre-and post-treatment interviews stressed their discomfort at the fact that their writing would be assessed. For example:

> TaskStream is very useful, but I get more nervous and stressed when my writing assignment is going to be graded.

(Excerpt 17. Interviewee 1, post-treatment interview)

Avoidance of writing

The majority of participants in the pre-treatment interview acknowledged that they avoided writing as much as possible unless their writing tasks

were to be graded in order to pass the course (interviewees 2, 3 and 5):

> I don't like to write … but I have to write to pass the course.

(Excerpt 18. Interviewee 3, pre-treatment interview)

They explained their behaviour in terms of a lack of sufficient knowledge of writing patterns and strategies when it came to writing:

> …my teachers in my secondary school and university undergraduate English courses did not teach me the principles and strategies of writing. I have to memorize texts to pass the exams.

(Excerpt 19. Interviewee 5, pre-treatment interview)

The lack of an authentic audience which students could interact with was also cited:

> I have to write about a topic that will be read by my teacher and she asks me to pay attention to grammatical errors and spelling. No one else reads my writing and comments on my ideas. It is boring.

(Excerpt 20. Interviewee 2, pre-treatment interview)

Half of the interviewees reported that the peer reviewing feature, the forum, and publishing their work on the web server or on the internet enabled them to exchange ideas, opinions and stories with others in the class and on the internet:

> After using Taskstream, I added my British friend and two of my housemates as external evaluators to comment on my ideas. I also ask my peer review group members to comment on my work.

(Excerpt 21. Interviewee 2, post-treatment interview)

They reported that they made friends and went online to read their work and make comments:

> I created my blog to post my work and asked my old English teacher to comment on my writing. I also asked some of my Facebook friends to comment on my work and my ideas. I now try to post some work every week and see what they think of it.

(Excerpt 22. Interviewee 4, post-treatment interview)

Fear of peers' negative feedback

The participants doubted the benefits of their classmates' feedback. They distrusted their colleagues' opinions regarding their writing:

> I do not trust my classmates evaluating and commenting on my work because my writing is better than theirs.

(Excerpt 23. Interviewee 3, pre-treatment interview)

Some participants pointed out their fears about their classmates' negative reactions to, or views of, their writing:

> …I cannot give my writings to other classmates because I am afraid they may laugh at my writing.

(Excerpt 24. Interviewee 1, pre-treatment interview)

However, the participants revealed changes in their behaviour about sharing their writing with classmates and friends in seeking feedback as in excerpt 21.

However, students still did not trust their ESL classmates' comments:

> First, I read the English Native speakers comments and tried to edit my writing, then I read my peer group comments and compared them with the external evaluators' comments. If they matched, then I edit my essay.

(Excerpt 25. Interviewee 2, post-treatment interview)

5.3.4 Theme four: writing self-efficacy

The findings of the pre-intervention interview questions about ESL participants' writing self-efficacy and the follow-up probing questions revealed that the only skills that they monitored and evaluated out of the various writing product skills, were writing conventions and word choice:

> While writing I pay much attention to verb tenses, and word choice. I try to use the same tense, present or past, and check the dictionary to look for the meaning of words I want to write in English. Then I check if I have spelled it correctly before going back to writing.

(Excerpt 26. Interviewee 4, pre-treatment interview)

However, the majority of interviewees stated that using the e-portfolio improved their methods of monitoring and assessing their writing. They reported that they started to focus their attention during the first draft on the clarification of ideas and meaning, before moving to the logical flow of events in the essay organization as the second step. Selecting the appropriate words then followed, and the last step was to check their use of writing conventions:

> …in my first writing [draft], I focus on my ideas. They must be clear and in order, then grammar and words at the end.

(Excerpt 27. Interviewee 5, post-treatment interview)

5.3.5 Theme five: writing process approach self-consistency

The participants showed in their first interview sessions that they wrote in English as their teachers had previously taught them. That is, writing was visualised as a single linear process, where the students wrote for their teachers:

> I think about the topic and start writing down the first idea get to my mind, and keep writing until I finish it. Then I give my work to the teacher for correction.

(Excerpt 28. Interviewee 4, pre-treatment interview)

> I have to write about a topic that will be read by my teacher and then she asks me to pay attention to grammatical errors and spelling.

(Excerpt 29. Interviewee 2, pre-treatment interview)

After the intervention, the students viewed writing as a recursive process, where the writer has to go through three the different writing stages of planning, writing and revising and editing:

> I divided my time into three parts. Week one was for collecting the information and planning my ideas… I read the task requirements and wrote down the topic and what kind of writing pattern I would use then I started collecting information and material from the internet and the Library… I used the outline format in the resources section to add my topic sentence, and ideas.

(Excerpt 30. Interviewee 5, post-treatment interview)

> Week two, for writing the essay …I decided to write the introduction in the first two days then four days for the main body and one day for the conclusion.

(Excerpt 31. Interviewee 5, post-treatment interview)

> …week three for revising my essay and writing the first draft to submit to the website…I leave it for one day and…then I read it aloud and see if it is ok … I mark any problems and try to fix them.

(Excerpt 32. Interviewee 5, post-treatment interview)

After the introduction of the TaskStream e-portfolio they came to view writing as recursive, where they could change the structure of the outline at any moment during the process:

> I sometimes add new ideas during writing so I add them to the outline and quickly reread the paragraph to check its meaning.

(Excerpt 33. Interviewee 6, post-treatment interview)

The ESL students came to view writing as a socially interconnected act, where the writers exchanged ideas with their classmates:

> …I send my work to the peer review group to comment and give feedback.

(Excerpt 34. Interviewee 3, post-treatment interview)

This process included external evaluators from outside the institution:

> …After that I send it to my peers and my external evaluator to comment. I read their feedback.

(Excerpt 35. Interviewee 5, post-treatment interview)

Then students read the comments and decided which changes they would make before rewriting their essays:

> … My peer review group give feedback. I read their suggested corrections and make some changes. Finally, I rewrite the essay and send it online to my teacher.

(Excerpt 36. Interviewee 3, post-treatment interview)

> …I read feedback about the ideas and the order of ideas and

> paragraphs and if there are some concerns about grammar I may change it.
>
> (Excerpt 37. Interviewee 5, post-treatment interview)

They also indicated that they wrote multi drafts before finishing their first clean draft which they then submitted.

> I rewrite my essay after the feedback changes, check spelling and grammar using the Word [processor] and then submit the new draft online.

(Excerpt 38. Interviewee 6, post-treatment interview)

5.4 Themes emerging from the interview analysis

Five themes emerged from the thematic analysis of the second interview sessions. These themes were: *self-learning, collaborative learning, writing as a social act, raising self-confidence,* and *previous learning experience.*

5.4.1 Theme one: self-learning

The participants stated that they involved TaskStream features in designing their own learning plans, by setting their learning goals in the Standard Area, choosing material from the resources section, and choosing a suitable time using the calendar, in order to learn more about writing at their own pace:

> Every week, I write down what I am going to study. For example, I will learn about argumentative essays. I write that in the Standard Area as my goal, and then I read the example. I write down the different grammatical structures, past, present, present perfect, past perfect tenses, and the new vocabulary and learn them one by one. Then I try to write an essay which is similar to the example and then send it to my external evaluator to comment.

(Excerpt 39. Interviewee 2, post-treatment interview)

5.4.2 Theme two: collaborative learning

The participants said that they used the Taskstream's multi channels of interaction, such as the bulletin boards, instant messenger and email account, to exchange ideas and texts with each other:

> The website allows me to post questions on the bulletin board about writing and to get replies from my classmates without knowing my identity. This makes my less worried and more eager to ask and learn about writing.

(Excerpt 40. Interviewee 3, post-treatment interview)

Also working in small peer reviewing groups enabled students to learn from each other:

> I learned a lot from working with my peer-reviewers. They tell me where I make a mistake and sometimes they suggest links in the resources to read. I learn new words from their written assignments and phrases that I write down to use in my future writings. I also feel more confident in my writing and able to comment on my friends' work. Working in small groups is very helpful.

(Excerpt 41. Interviewee 1, post-treatment interview)

5.4.3 Theme three: writing as a social act

The analysis of the interview data suggested a change in the students' view about writing. They became more likely to see it as a social act of communication involving the interchange of ideas and points of view:

> I posted my work online and invited my old English teacher to comment on my writing. I also created my blog and asked some of my Facebook friends to comment on my work and my ideas… I needed to show them my ideas and what I think about these topics

> and find out what they think also. Writing is a tool to communicate with others and create more friends.

(Excerpt 42. Interviewee 4, post-treatment interview)

> I recently created my page on Facebook about global warming and pollution. I started to posted my ideas and list of my readings and I asked others to comment and add new information to the page. It really helps me to learn more and get more friends.

(Excerpt 43. Interviewee 6, post-treatment interview)

5.4.4 Theme four: raising self-confidence

Many students revealed that they felt more confident in their ability to write well in English, and to express themselves appropriately. For example:

> I also feel more confident in my writing and comment on my friends' work. Working in small groups is very helpful.

(Excerpt 44. Interviewee 1, post-treatment interview)

> I feel more confident now that I will get a good grade.

(Excerpt 45. Interviewee 6, post-treatment interview)

5.4.5 Theme five: previous learning experience

The interviewees blamed various other factors for their problems, rather than themselves. They criticized their school teachers' teaching methods as can be seen in excerpts 10 and 11:

> All I have to do is to memorize general statements that can be used in most topics. Just change what is needed.

(Excerpt 10. Interviewee 2, pre-treatment interview)

> …My teachers in my secondary school and university undergraduate English courses did not teach me the principles and strategies of writing. I just have to memorize the texts to pass the exam.

(Excerpt 11. Interviewee 2, pre-treatment interview)

They also complained about their English course materials as can be seen in excerpt 4:

> This is my third writing course since I came to the United Kingdom seven months ago and I feel that my writing ability is my least developed skill… All they teach us is to write about a personal experience, or about the importance of technology.

(Excerpt 4. Interviewee 6, pre-treatment interview)

5.5 Chapter summary

The thematic analysis of the interview data appears to have identified change in the ESL participants' beliefs with regard to writing as a concept and its perceived value. Changes in the participants' confidence in their writing sub-skills were also observed, as well as in their application of the writing process approach on a regular basis. However, despite the apparent increase in their level of confidence in their writing, their levels of anxiety about writing did not seem to have changed much. The findings also revealed a change from a view of writing as solitary activity and a linear process, to seeing it as a more socially interactive act and a recursive process involving the three main steps of planning, writing and rewriting. Overall analysis of the data suggests an increase in the ESL participants' self-confidence in their writing and in their ability to learn by themselves and with others.

Chapter 6: Discussion

6.1 Overview

This chapter summarises the research findings, and then discusses the relationship between the results of the present study and those of similar studies in the published literature.

6.2 Discussion

This study was carried out in order to investigate the impact of implementing a web-based learning platform in an ESL learners' writing course, on the learners' writing self-motivational constructs and writing performance. The study adopted a pre-post-test design and used mixed methods to collect data from two groups of ESL students. The results in relation to the research questions are discussed below in interpreting the effect of utilizing TaskStream as a web-based learning portfolio on ESL students' writing self-motivational constructs and writing performance.

6.2.1 Does utilising a web-based learning platform encourage a change in ESL learners' writing self-beliefs?

The pre-intervention test findings indicate no significant differences among the participants in the control and experimental groups in terms of the three writing self-belief variables of writing self-concept, the perceived value of writing and writing anxiety. Slight differences between the groups could be

due to the number of participants in each group and to the participants' perceptions about writing in English at the beginning of this study, as shaped by their previous writing experiences (Pajares 2003). Writing tasks in the beginner and pre-intermediate language proficiency levels ranged from writing a few sentences to describing pictures, to short paragraphs about their holidays, or letters to friends. These are all considered lower level writing tasks demands (Pajares 2003; Mills and Péron 2009). Further discussion of each of the three writing self-belief variables is presented below.

Does utilising a web-based learning platform encourage a change in ESL learners' writing self-concept?

The pre-intervention questionnaire findings reveal no statistical difference between the two groups of students in their beliefs about the ease of writing. The students admitted the difficulty of mastering writing skills, and considered writing as a difficult task that they struggled to accomplish (see excerpt 1, p.167). The post-intervention questionnaire findings did not indicate any significant change in the students' beliefs that writing was a difficult task to accomplish, even after using the TaskStream e-portfolio. The interviewees indicated that TaskStream helped them in learning about the principles of writing an essay (excerpt 3, p.168). The students' continuing belief that writing is a difficult skill after using TaskStream, may be related to the higher demands of the writing tasks they are given at the later date (Pajares 2003; Mills and Péron 2009), as well as what they notice and hear from their friends and colleagues about the difficulty of getting a high mark

in the IELTS writing test. Using TaskStream may have not altered their perceptions of the difficulty of writing, but it could have given them greater insight into how they might tackle the difficulties posed by a writing task, as suggested in excerpt 3:

> [TaskStream] also has a link to the academic phrase bank that helps me in preparing for my IELTS writing. But working on the writing is still difficult and I'm still struggling to master it.

According to the pre-intervention findings, students were not satisfied with the slow progress of their writing and the type of material used to teach them writing (excerpts 4 and 5, p.169). However, using the TaskStream e-portfolio features helped to change the students' satisfaction with writing. The post-intervention questionnaire findings indicate a significant difference in the writing satisfaction variable (0.046). Interviewees specified that the material posted in the resources folio helped them to answer some of their concerns. Peer feedback about their writing, in addition to the students' comparison of their own writing with that of their colleagues, helped in increasing their confidence in their ability to write. Not identifying students by their real names, encouraged them to post questions in the course forum without feeling embarrassed, as stated in excerpt 40:

> The website allows me to post questions on the bulletin board about writing and get replies from my classmates without knowing my identity.

Data from the use of TaskStream reveal an increase in the number of postings of questions and replies during the TaskStream intervention period as represented in Figure 6.1.

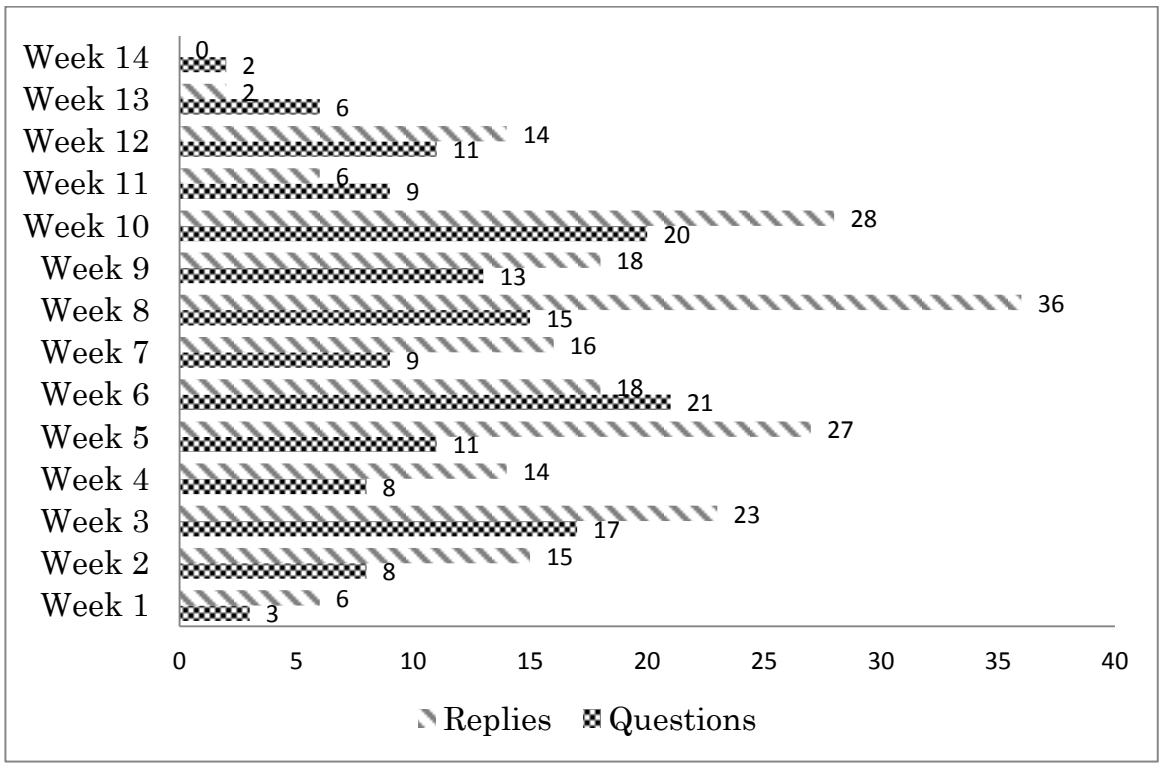


Figure 6.1 Students' questions and replies: weekly statistics

The triangulated data supported the observed change in writing satisfaction and the students' beliefs about the usefulness of TaskStream as a resource for learning about the stages of the writing process and writing strategies and styles. The data shows that they see it as a medium through which they can compare their writing with that of their colleagues, and post questions and answers in a process of reciprocal scaffolding and dynamic interaction, that enhances their confidence and leads to an overall change in their writing self-concepts as proposed by Marsh and Craven (2006).

Does utilising a web-based learning platform encourage a change in ESL learners' perceived value of writing?

In both the pre- and post-intervention tests the students admitted the importance of writing skills. They considered the ability to write well to be dependent on proficiency in the other language, and as a channel through which their voice could be heard by a range of audiences (see excerpts 8 and 9, p.170). No significant change was found in their belief in the importance of writing after using TaskStream.

Students in neither group showed any significant differences before the intervention in terms of their interest in writing. They used to memorize general statements to use in any topic (excerpt 10, p.170) in order to pass their courses and move to the next level (excerpt 11, p.170). They also stressed that the only readers for whom they wrote were their teacher, who usually commented on grammatical problems, as Interviewee 2 indicated:

> I had to write about a topic that would be read by my teacher and then she asked me to pay attention to grammatical errors and spelling. No one else read my writing and commented on my ideas.

(Excerpt 48. Interviewee 2, pre-treatment interview)

The post-intervention test findings revealed a significant change in the students' interest in writing, which was moderately affected by their use of the TaskStream e-portfolio as a medium to post, reply (Figure 6.1), share work and comment on colleagues' posted work (Figure 4.14, p.161). Students also indicated that they used the e-portfolio to share

their opinions and experience, and to give and receive feedback (excerpts, 12 and 13, p.171).

The use of the TaskStream e-portfolio enhanced their perceived value of writing among students in terms of its importance as a valuable conduit for communicating and sharing their voices in a rhetorically and linguistically accepted form, thus leading to developments in their language proficiency levels as a reward for the efforts that they made (Wigfield and Eccles 2000). The significant improvement found in the perceived value of writing, despite the modest scale of its impact, is a key indicator in predicting the increased self-regulation of writing as suggested by Hawthorne (2008) and as discussed further below.

Does utilising a web-based learning platform encourage a change in ESL learners' writing anxiety?

Participants remarked that, despite higher levels of knowledge of writing patterns and strategies, they still felt nervous and uncomfortable when performing their writing tasks (excerpts 16 and 17, p.172). A reduction was found in the students' levels of anxiety with regard to the assessment of their writing following the use of the TaskStream e-portfolio. Also, anxiety levels expressed as writing avoidance, anxiety about writing and worries over negative feedback, were reduced in the post-treatment test (see Table 4.5, p.140). This difference between the two groups in terms of levels of anxiety about writing was not, however, statistically significant.

Nevertheless, these observed changes in anxiety levels correspond with significant changes in their interest in and satisfaction with writing, after they had used the forum and published their work on the web course server or had discussed their ideas and opinions and shared stories with others (see excerpts 21 and 22, p.174). The findings also reveal a slight change in the participants' anxiety about negative feedback ($p = 0.070$, *mdn* (conventional) = 25.6, *mdn* (e-portfolio) = 18.6). However, the participants doubted the benefits of their classmates' feedback. They distrusted their colleagues' views and opinions regarding their writing, and paid more attention to comments from external reviewers and made the changes the latter suggested (excerpts 23, 25 and 26, pp.174-175).

The participants' writing anxiety had been shaped by their previous writing experience and teachers, and by the practice of memorizing texts and copying them in writing exams. Students should be encouraged to share their ideas, opinions and experiences, and to collaborate and publish their writing for audiences outside the classroom. The use of the e-portfolio in this short term study led to a noticeable reduction in writing anxiety levels and better writing self-concepts, a higher perceived value of writing and increased self-confidence as writers. These beliefs on the part of students that they are able to create and develop texts and hold their writing to be genuine expressions of themselves, are likely to be vital factors in their success or failure in academia (Bandura 1986, 2001). The study's findings concerning writing self-beliefs are in line with those of Mayor et al.'s (2010) study which found positive a impact on students' literacy, motivation and

self-regulated learning skills from the use of the ePEARL electronic portfolio.

6.2.2 Does utilising a web-based learning platform encourage a change in ESL learners' writing self-efficacy?

The data emerging from the pre-intervention test of writing self-efficacy as illustrated in Table 4.6 (p. 140) indicated no significant difference between conventional and e-portfolio groups in terms of the learners' judgements of their writing content, flow of ideas, use of appropriate vocabulary , and application of the correct grammatical structures, punctuation, and spelling forms. However, the conventional groups' median ranks for writing self-efficacy were higher than those of the e-portfolio group, except for that of the use of writing conventions (Figure 6.2).

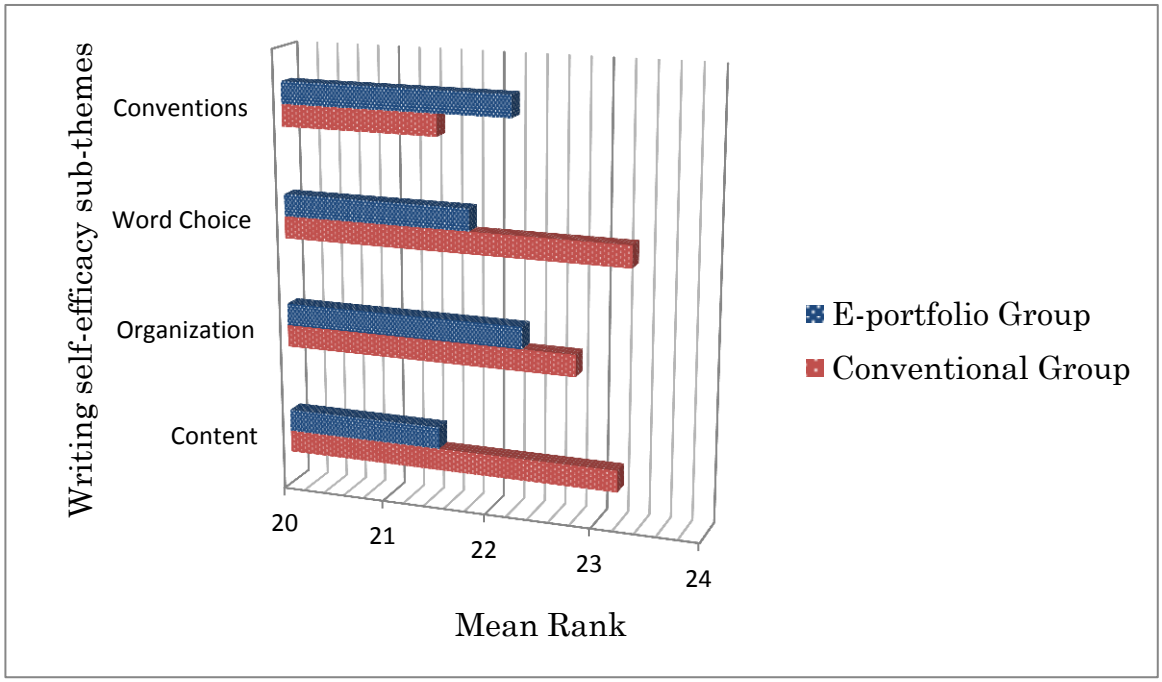


Figure 6.2 Students writing self-efficacy sub-themes pre-test mean rank

In the first interviews, students pointed out that using accurate forms of verb tenses and checking spelling were the only skills they focused on before submitting their assignments (see excerpts 6 20 and 38).

However, the findings from the post-intervention test revealed significant differences in the ESL learners' writing self-efficacy (0.007), and its components of content (0.032), organization (0.047), word choice (0.037), and conventions (0.008), with those in the e-portfolio group giving consistently higher scores (Figure 6.3).

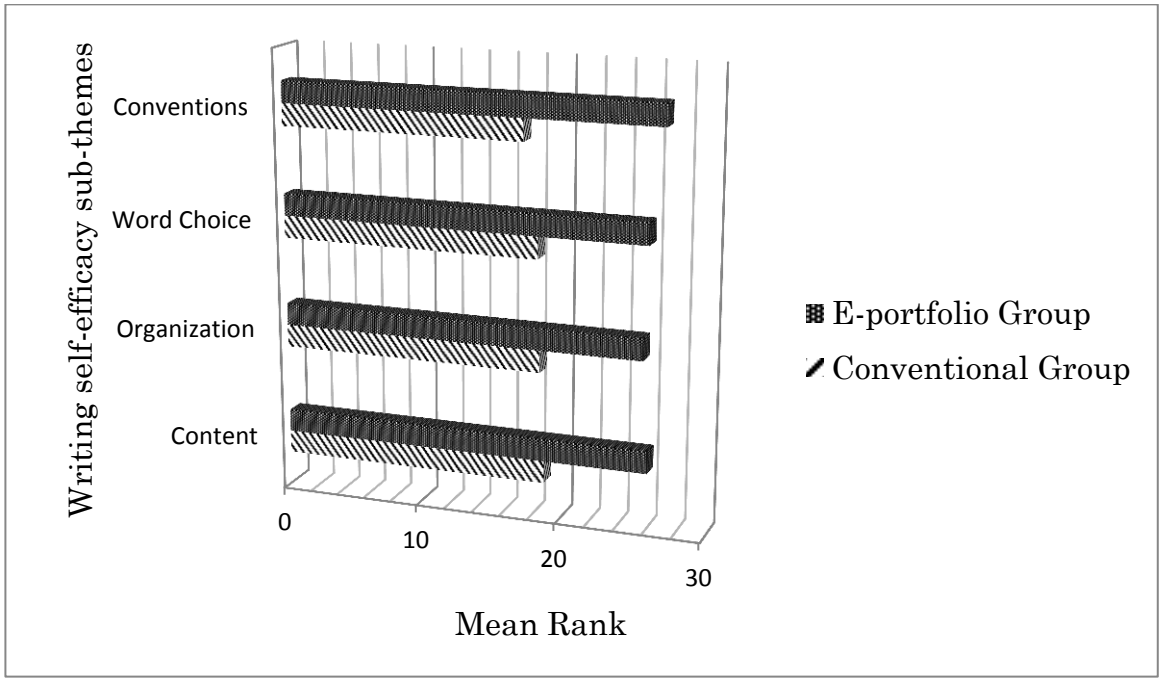


Figure 6.3 Students writing self-efficacy sub-themes post-test mean rank

The development of the learners' awareness of their ability to organize their ideas in a manner that conveys intended meanings through the use of proper vocabulary and conventions, could be influenced by a variety of factors. These might include students' attention to the clarity of meaning, a sense of

ownership of their work , collaborative work in small groups and feedback (mutual scaffolding), and the selection of authentic topics which might promote changes in the way their ideas were organized. The students' attention to the clarity of meaning in their writing when presenting their own opinions motivated them to explore different strategies to generate and organize ideas and to view various examples of writing. Before they started to write, after the intervention, students reviewed the stages of the writing process and looked at examples of similar tasks in the e-portfolio resources section or those written by members of their peer reviewing group as well as following hyperlinks to other writing websites. Then they focused more on meaning and the organization of ideas, as indicated in this excerpt:

> Before I write my essay I review the writing process steps and try to follow them by dividing my writing process into three stages, planning, writing and revising. In planning, *I focus on ideas and put them in order* then I write them in my outline. In the writing step, I write the essay using the outline and follow the examples in the resources section. [emphasis added]
>
> (Excerpt 46. Interviewee 3, post-treatment interview)

The students' sense of ownership of their writing encouraged them to engage more in writing activities, which might thus have enhanced their beliefs about their writing self-efficacy (Walker 2003; Barton 2005). The e-portfolio feature of working in small collaborative groups of their choice enabled the students to circulate their drafts among themselves and to their external reviewers without worrying about negative feedback. Instead, they perceived comments from their peers and external reviewers as constructive feedback. The group feedback focused on clarity of meaning, the flow of

ideas, and the choice of vocabulary, and only after that on writing conventions. This assisted and scaffolded the students in developing their drafts and their overall writing abilities. Using this e-portfolio feature permitted multi-directional dialogue and dynamic and open-ended interaction in a flexible and collegial atmosphere between the group members (Hyland and Hyland 2006). Mutual scaffolding among peers helped them to extend their writing competency and to pass through their ZPD. It also raised the ESL learners' awareness of their strengths and weaknesses in writing (Tuzi 2004), and so consequently enhanced their writing self-efficacy, as expressed by one participant in the study:

> I learnt a lot from working with my peer-reviewers. They told me where I made a mistake and sometimes they suggested links in the resources to read. I learnt new words from their written assignments and phrases that I wrote down to use in my future writings. I also feel more confident in my writing about commenting on my friends' work. Working in small groups is very helpful.

(Excerpt 47. Interviewee 1, post-treatment interview)

A final factor which encouraged change in the ESL learners' writing self-efficacy beliefs was the selection of authentic topics related to the students' own daily lives, such as the use of technology in modern life, living in big cities and educational systems. These topics resonated with the students' experience and allowed them to express their opinions (Zenkov and Harmon 2009). They also allowed the students to write for authentic audiences (Warschauer 2007), ranging from members of their small collaborative groups, external reviewers, and teachers, to wider audiences such as their parents and friends who can read their work posted on the internet, either in

their blogs or in the TaskStream discussion forum. Writing for genuine audiences about authentic topics helped the ESL students to gain more self-confidence in their writing and to enhance their writing self-beliefs (Pajares 2003; Pajares and Valiante 2006), which is reflected in the following participant's assertion:

> I feel more confident now that I will get a good grade. I use the resource sections to see which patterns suit my assignment, try to take time in planning my ideas and vocabulary then write and send it to my peer reviewing group and look for their opinions about my ideas. Then I use the checklist to check my common grammatical errors then submit my assignment.

(Excerpt 16. Interviewee 6, post-treatment interview)

These findings are congruent with Lopez-Fernandez and Rodriguez-Illera's (2009) study results which showed that the students in their study had more positive beliefs and better self-efficacy through the use of an e-portfolio as a valuable personal developmental learning tool. The moderate impact found on the students' writing self-efficacy as a result of using the TaskStream e-portfolio is another indicator pointing to a positive correlation between writing self-efficacy beliefs and writing performance, as shown below.

6.2.3 Does utilising a web-based learning platform encourage a change in ESL learners' writing to consistently apply a process approach to writing?

The results concerning the students' self-consistency in the writing process before the intervention revealed by the first interview session indicated no significant differences between the conventional and the e-portfolio groups (see Table 4.8, p.143). These ESL students lacked sufficient knowledge about

the stages of the writing process and the indispensable strategies which underlie the effective writing of texts (Zito et al. 2007). They only intermittently took sufficient time to plan their essays, and infrequently used strategies to generate ideas and outline these ideas in such a way as to maintain a logical flow of ideas, and to ensure the cohesion of essay sentences and paragraphs. Instead they spent too much of their time on the conventions of writing and planning the next sentence (Sasaki 2004). The students believed that a good written text should be free of errors, resulting from a predominant view of writing as a means to practice vocabulary and grammar where errors are not tolerated (Ferris and Hedgcock 2005; Matsuda 2006; Brown 2007). These views were clearly expressed by the fourth participant in the first interview session:

> …I try to use the same tense present or past and check the bilingual dictionary to look for the meaning of the word I want to write in English then write it down then check if I have spelt it correctly before going back to writing… I just make sure that spelling and grammar are ok then I submit my essay.

(Excerpt 49. Interviewee 4, pre-treatment interview)

The ESL students' first essays are good examples of the knowledge-telling model, where students wrote down what they knew about the topic without giving much thought either to the different stages of writing or to the readers of their work (Hyland 2001).

The analysis of the post-implementation data revealed significant increases among students in the e-portfolio group in levels of self-consistency in applying the stages of the writing process (see Table 4.9, p.144), although this was the case only in some of the sub-themes of self-consistency. In the

forethought phase of self-consistency, enhancements were observed in the application of writing strategies to plan their essays (0.013) and also to some extent to in their writing tasks (0.052). This change can be attributed to feedback from teachers and peers, encouraging them to use various planning strategies during the writing workshops in class and while working together online in their collaborative groups. The Standard Area feature of Taskstream enabled the students to define writing goals for the course and for each specific writing task (Figure 6.4).

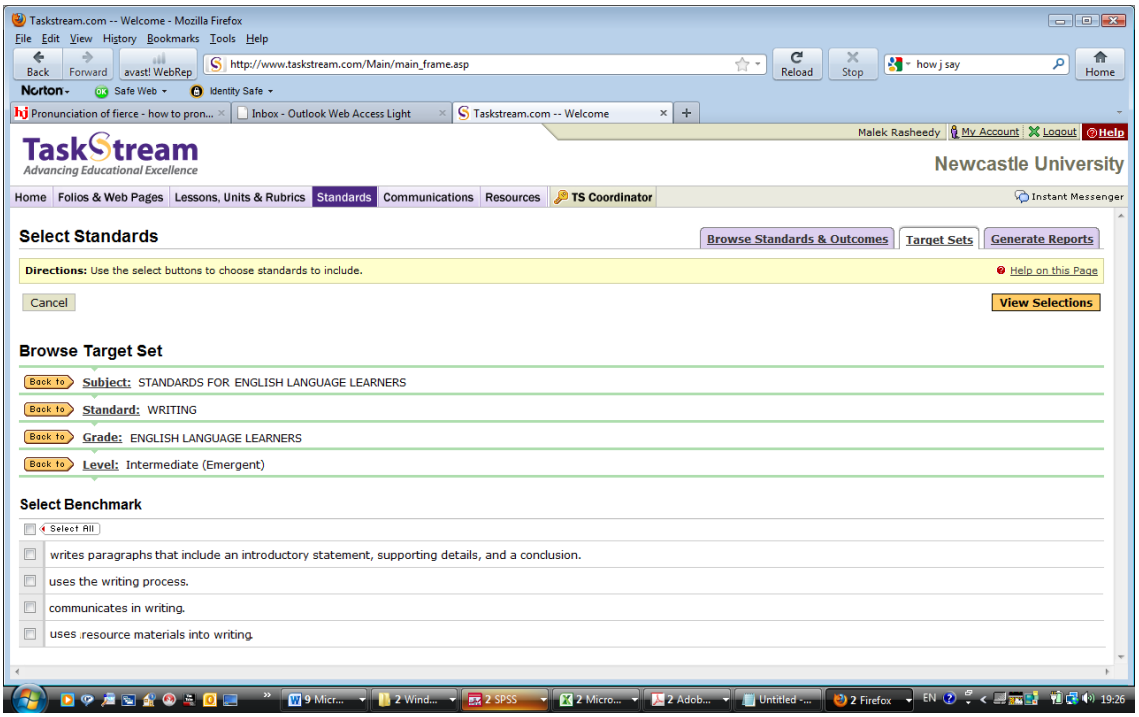


Figure 6.4 A participant's writing aims in the Standard Area

The form and survey builder features furthermore allowed students to create an outline for their essay title, thesis statement, introduction, key idea and supporting examples for each paragraph and for the conclusion. The

TaskStream tools helped the ESL learners to improve their strategies for planning and organizing their thoughts before writing, as revealed by the data (see Table 4.9, p.144) and the observed increase in the number of times these features were used (see Figures 4.6 and 4.7).

No noteworthy differences between the participants in either group were noted during the performing phase. Despite this, the data analysis shows an improvement in writing performance on the part of the e-portfolio group participants. This improvement could be due to the increased use of e-portfolio features to access the example essays section of the resources folio, and to visits to the academic vocabulary links (Figure 4.13). Feedback from the teacher and peers assisted students in noticing weaknesses in their writing, particularly in terms of clarity of meaning. The students perceived themselves as novice writers who might misjudge improvements in their writing performance following the use of consistent writing strategies while executing their writing tasks. The results indicate that students who employed TaskStream features to improve their writing performance obtained higher median ratings (23.12) than their colleagues in the conventional group (20.93).

Enhancements were also observed in the application of writing strategies, seeking help and feedback, self-monitoring and evaluation, and making changes (revision). TaskStream's collaborative working features enabled immediate and synchronous interaction between the students and their external reviewers for receiving feedback. TaskStream's comments and asynchronous features provided extra conduits for getting feedback from

other students outside the student's small peer reviewing group. Taskstream also allowed the students to send links of their work to others who had no access to the platform itself in order to review their work, complete the peer reviewing form, and add further comments in the spaces provided. These features encouraged ESL learners to ask for feedback, as revealed by the increase in the use of these features by participants.

The survey and form generating features in TaskStream enabled learners to design their own self- and peer-assessment forms, based on the writing assessment rubrics and criteria. Then its components could be modified in accordance with developments in writing skills as indicated by their grades and feedback, and as a result of comments from the teacher, peers and external reviewers. This feature allowed learners to generate progress reports that enabled them to record and monitor their own writing performance. These reports helped the learners to gain a better understanding of the strengths and weaknesses of their writing, which may have led to a more effective use of strategies to improve their writing, as suggested by Coleman and Webber (2002). The progress report features allowed students to link their writing performance with their goals, as recorded in the Standard Area. Therefore, the learner has more control over the use of the writing process in performing the different writing tasks in a consistent manner. In other words, these features enhance learners' self-monitoring capacities, and consequently enhance the self-efficacy of the writing process in addition to the writing performance.

TaskStream's various tools encouraged changes in the way the students sought feedback and used self-monitoring and evaluation strategies. This led to improvements in their performance as a result of making changes suggested by others, and comments on the students' first draft. This was also supported by the various features of TaskStream, such as the resource folio and its various sections that provide scaffolding to ESL learners when they revise and edit their drafts. This type of change was observed among the students in the e-portfolio group, who had higher median self-assessment ratings than their colleagues in the conventional group when asked about how consistently they used various revision strategies in writing their assignments. However, no statistically significant difference was found between the two groups in the use of strategies associated with revising and editing their writing.

These findings are generally in line with those of Mayor et al. (2010), which indicated that the use of an electronic portfolio (ePEARL) enhanced learners' self-regulation strategies while performing reading and writing activities. The findings also coincide with those of Desmet et al. (2009), which suggested that the use of an EMMA electronic portfolio in a writing course improved revision strategies and performance outcomes. The improvement found in this study into students' self-monitoring strategies following the implementation of TaskStream e-portfolio, similarly accords with the findings of Valdes (2010), where using the e-portfolio enhanced awareness among ESL students of the changes in their writing, and the benefits of using authentic audiences to provide feedback.

6.2.4 Does utilizing a web-based learning lead to a change in ESL students' overall writing performance?

The initial analysis showed no significant difference in writing scores between participants in the conventional (2.5) and in the e-portfolio groups (2.6) before the implementation of the web-based learning portfolio (Figure 6.5).

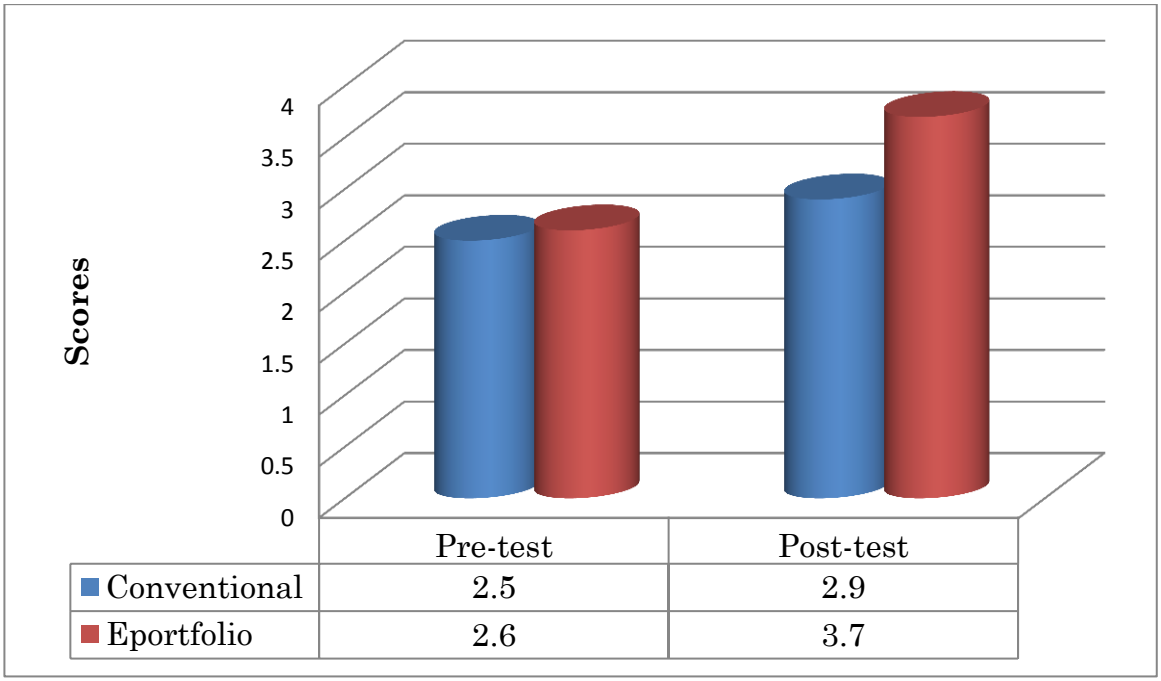


Figure 6.5 Holistic scores in terms of writing performance

The post-implementation tests of writing performance, however, revealed significant differences in both holistic and analytic scores between students in the conventional and in the e-portfolio groups. The findings showed general improvement in the writing of e-portfolio group students following the implementation of the TaskStream e-portfolio, as perceived by two

independent holistic raters. They noted that the essays contained competent controlling ideas which addressed the prompt. The essays were organised with a beginning, middle and end, although in a manner that was sometimes formulaic. The development explained and supported the students' ideas, although both the content and organization was often disjointed in places. Also, they indicated that most sentences were clear while often lacking variety and complexity. Errors in grammar, diction, and mechanics may be distracting.

The writing analytical scores (Table 4.13, p.154) supported those of the holistic raters in that there were improvements in the writing product skills on the part of the e-portfolio group students compared to their colleagues in the control group (Figure 6.6). The estimated effect sizes of using TaskStream ranged from moderate for the choice of appropriate vocabulary, to very strong for the use of conventions.

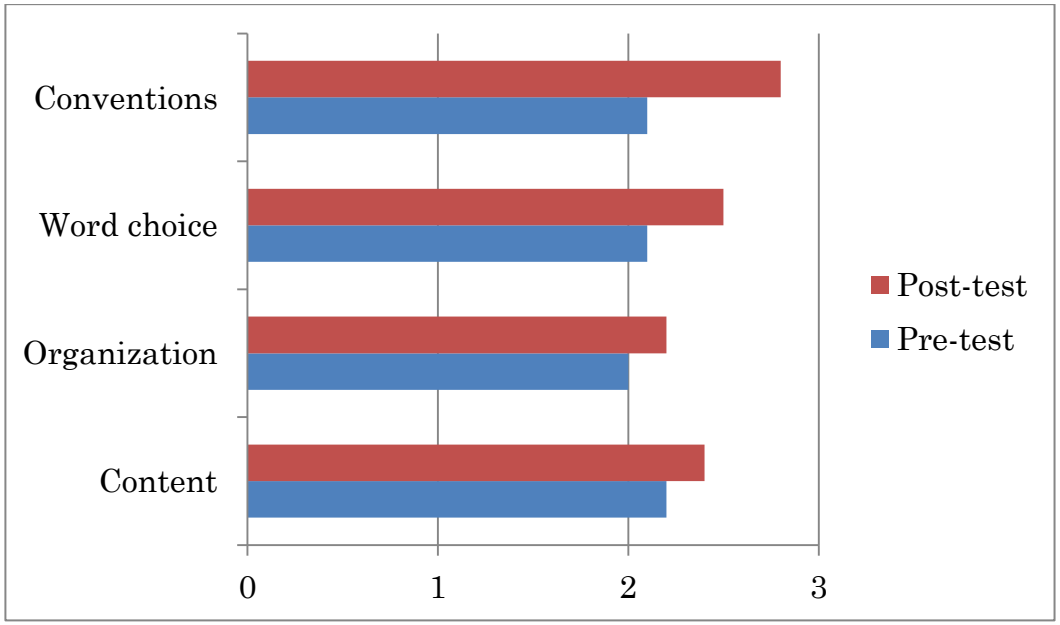


Figure 6.6 Analytical scores in terms of writing performance

The scores and comments given by the raters indicate that the students using the e-portfolio as a learning tool were able to address all aspects of the writing tasks, although some were dealt with more comprehensively than others. The students expressed their own positions although these were not always clear. Students were able to organize their ideas coherently in a clear overall progression, and also to use an adequate range of vocabulary to convey their meanings. In addition, they used a mixture of samples and complex sentence structures. Students exhibited good control of grammar and conventions, but also made errors that may have hindered communication.

These findings are in accord with those of the previous studies of Acker and Halasek (2008) and Meyer et al. (2010), both of which indicated that using e-portfolios in writing classes encourages improvements in students' writing with respect to the global skills of content, organization, and word choice, and local skills such as the use of conventions.

The findings presented in Table 4.15 (p.157) show a strong positive relationship between writing performance and the perceived value of writing (0.823). Moderate relationships were also demonstrated between writing performance and writing self-concept, writing self-efficacy, and writing process self-consistency (0.419, 0.629, 0.560) respectively. A weak inverse relationship was noted between writing anxiety and writing performance (-0.51). These findings give an overall view of the impact of the TaskStream e-portfolio as a personal developmental learning tool which enhances knowledge and understanding, and increases students' self-awareness.

Chapter 7: Conclusion

7.1 Overview

The summary of the main conclusions of the study are present in Section 7.2. Implications for practice are discussed in Section 7.3. Section 7.4 contains the limitations of the study, and recommendations for further research in this field are considered in Section 7.5.

7.2 Summary of the study

The main goal of this study was to gain a clearer understanding of the relationship between ESL students' writing self-beliefs, writing self-efficacy, self-consistency of the writing process and their writing performance, following the implementation of the TaskStream e-portfolio as a web-based learning portfolio. The four research questions that were proposed for the purpose of this study were: (a) Does utilizing a web-based learning platform encourage a change in ESL learners' writing self-beliefs? (b) Does utilizing a web-based learning platform encourage a change in ESL students' writing self-efficacy? (c) Does utilizing a web-based learning platform encourage ESL students to consistently apply a process approach to writing? (d) Does utilizing a web-based learning platform lead to a change in ESL students' overall writing performance?

Using a non-equivalent pre-test/post-test quasi-experimental research design, 46 ESL students in an English Language Centre were recruited to

form the control and experimental groups during the 2010 spring and summer terms. The mixed method tools of an online questionnaire, writing samples, online tracking and interviews, were used to collect data.

The first research question investigated changes in the students' beliefs about the perceived value of writing, their writing self-concepts and anxiety about writing. The analysis of the data collected from self-report questionnaires and interview sessions in the second and final weeks of the study, as well as online tracking, revealed improvements in the perceived value of writing and in the writing self-concept beliefs on the part of the experimental group of ESL students. No significant differences were found between the two groups in terms of levels of writing anxiety.

The second research question examined the impact of using the TaskStream e-portfolio on the ESL students' belief about the self-efficacy of their writing in terms of the skills of content, organization, word choice and conventions. The analysis of the mixed source data indicated significant differences between the groups in terms of their beliefs about their writing skills. Students in the e-portfolio group were more confident than those in the conventional group in their ability to judge their global and local skills as reflected in their writing products at the end of the study. This confidence could be represented in the medium effect size of using the TaskStream e-portfolio. This shows the practical significance of using TaskStream independently from the sample size and the measurement scale as suggested by Vaske, Gliner and Morgan (2002).

The third question explored changes in the ESL students' self-consistency in using the writing process approach following the introduction of the TaskStream e-portfolio. The findings showed significant changes in the e-portfolio group students' beliefs concerning the consistent use of strategies appropriate to the writing process approach.

The fourth research question concerns changes in the quality of the ESL students' writing. Two independent raters assessed writing samples at the beginning and at the end of the study, using holistic and analytic writing rubrics. The findings revealed significant differences between the two groups in terms of the quality of the students' writing at the end of the study. Differences were found in both the holistic scores and in the analytical scores with regard to productive skills. The findings showed improvements in the overall writing performance of the students in the e-portfolio group who used the TaskStream e-portfolio.

7.3 Implications for practice

Based on these results, the implications of this research concern three issues: learners, instructors and institutions.

7.3.1 Learners

– Learners can use e-portfolios to organize their learning by identifying their actual academic knowledge and the skills they have already achieved, together with the new skills they aspire to develop.

- E-portfolios provide a means for students to control their learning by setting their own learning goals, and creating a timeline within which these goals can be achieved at their own pace.
- E-portfolios provide a means for students to present and develop their identity in a social context, allowing them to engage with a wider environment through interaction with their teachers, peers, and with external reviewers and evaluators who provide feedback on their learning.
- E-portfolios provide an increased possibility of scaffolding for learners and can broaden their understanding of audiences.
- E-portfolios record learners' academic development, and their strengths and weaknesses with regard to academic knowledge and skills development. This promotes their ability to monitor and evaluate their progress and their metacognitive skills.
- E-portfolios allow learners to share, interrelate, collaborate and scaffold each other while learning, which enables them to construct meaning from information, provides them with better understanding, and subsequently transforms this into knowledge.

7.3.2 Instructors

- E-portfolios give instructors detailed insight into each learner's learning experience, beliefs, personal goals and learning strategies, thereby allowing them to gain a holistic picture of their development.

- This information permits instructors to gain a better understanding of their students' motivational constructs. This would help in using explicit instruction and a allowing a careful selection of e-portfolio assignments, in such a way as to enhance deeper learning and increase teaching effectiveness.
- Instructors should update the curricula and assessment methods used to include the students' use of the e-portfolio in graded tasks.
- E-portfolios enable instructors to view, track, and evaluate learners' progress from a single web-based portfolio.

7.3.3 Institutions

- In the development of practice with e-portfolios, teaching staff and administrators must have agreed-upon goals, intentions, and implementation strategies to enrich learning opportunities for their students.
- E-portfolios should focus on a limited set of aims and skills that are appropriate for each level of the language programmes on offer, since the use of e-portfolios will probably increase the length of time required to cover the curriculum.
- The use of e-portfolios involves long-term processes that necessitate their gradual implementation into English programmes, starting from the first level. This would allow learners to obtain more experience and confidence in using this technology.
- E-portfolios should be easy to use so as to enable staff to adapt its features in their curricula, and then train their students to use

various e-portfolio features as well as methods of reflection that would enhance their learning experience.

- E-portfolios would enable English Language programme administrators to monitor their students' learning processes and evaluate their progress, in order for staff to design remedial courses to suit students' needs.

7.4 Limitations of the study

The limitations of this study include the fact that the number of the participating ESL students was modest. A larger sample would have been more representative of ESL student populations in the North East of the UK and those with more heterogeneous English Language learning experiences. The small number of participants makes it difficult to generalize the findings of this study to the overall ESL context. These results provide exciting preliminary evidence related to the original research questions. It is hoped that these findings will encourage researchers in the field of applied linguistics to pursue further research into e-portfolio practices in ESL learning contexts.

The intensive schedule of the English Language programme and the limited duration of the study restricted the students participating in this research from spending more time learning and practising different writing strategies outside the course. The students indicated that they needed more time to study for their English language proficiency examinations. Therefore, the students were not able to complete the planned reflection essay task at the end of the study.

The TaskStream e-portfolio was designed mainly as an assessment tool for students in education departments, but it has many useful features that allow it be used as a learning tool in other subjects. It provides valuable channels for interaction with teachers, peers, and course materials that facilitate scaffolding and the development of learner proficiency.

The Hawthorne Effect was an additional threat to the internal validity of this study. Students were informed about the study at the beginning, and might then have altered their behaviour rather than conducting themselves normally. Also, the positive effect of e-portfolio use as revealed by the research may be due to the participants' preconception that technology is inherently a superior tool for instruction. For that reason, the decision was taken in the present study to investigate the effectiveness of the TaskStream e-portfolio as a web-based language learning environment, not only by addressing students' actual writing performance results, but also by identifying changes in the students' writing beliefs, and then by exploring the relationship between the two.

7.5 Future research directions

Future research could be directed towards using e-portfolios as learning tools in language learning classes to:

- Explore in depth how new types of social learning and self-regulation learning based e-portfolios affect how students learn in comparison to available commercial and open source e-portfolios.

- Carry out longitudinal research to evaluate changes in perceptions and performance of a larger population of English Language Learners in Baccalaureate degree programmes, who are unfamiliar with e-portfolio tools. This would provide additional important insights into e-portfolio practices in ESL/EFL learning contexts.
- Explore how the use of different e-portfolio file formats (text, audio, video, image) can help in developing students' reflective skills in natural learning contexts.
- Investigate the System Initiate Coaching feature. This e-portfolio software monitors the learners' writing patterns and length of pauses, then automatically provides hints when learners may not even realise that they need help.
- Explore how e-portfolio tools affect perceptions of the students and instructors about their roles in the learning process, and in the teaching-learning relationship.
- Investigate the user-friendliness of web-based portfolios and address the time constraints.

Bibliography

Abrami, P., Wade, A., Pillay, V., Aslan, O., Bures, E. and Bentley, C. (2009) 'Encouraging self-regulated learning through electronic portfolios', *Canadian Journal Of Learning And Technology / La Revue Canadienne De L'Apprentissage Et De La Technologie*, 34, (3), [Online]. Available at: http://www.cjlt.ca/index.php/cjlt/article/view/507 (Accessed: 22 December 2010.).

Abramovich, S. and Brouwer, P. (2008) 'Task stream as a Web 2.0 tool for interactive communication in teacher education. ', *International Journal of Technology in Teaching and Learning,* 4, (2), pp. 97-108.

Acker, S. and Halasek, K. (2008) 'Preparing high school students for college-level writing: Using eportfolio to support a successful transition', *JGE: The Journal of General Education,* 57, (1), pp. 1-14.

Ageyev, V. S. (2003) 'Vygotsky in the mirror of cultural interpretations', in Kuzulin, A., Gindis, B., Ageyev, V. S. and Miller, S. M.(eds.) *Vygotsky's Educational Theory in a Cultural Context.* Cambridge: Cambridge University Press.

Ajzen, I. (2005) *Attitudes, Personality, and Behaviour* 2nd ed. Buckingham: Open University Press.

Al-Hazmi, S. and Scholfield, P. (2007) 'Enforced Revision with Checklist and Peer Feedback in EFL Writing: The Example of Saudi University Students', *Scientific Journal of King Faisal University,* 8, (2), pp. 237-266.

Al-Jamhoor, M. (2005) *Connecting Arabs and Americans online to promote peace and to increase cultural awareness: a descriptive study about Arab EFL learners' perceptions, practices, behaviors and attitudes towards computer supported collaborative writing strategies and technologies.* Unpublished PhD thesis. Indiana University of Pennsylvania.

Al-Shahrani, A. (2004) *Error Analysis of Saudi Arabian Writers.* Unpublished MA Dissertation. University of Idaho.

Albin, M. L., Benton, S. L. and Khramstova, I. (1996) 'Individual differences in interest and narrative writing', *Contemporary Educational Psychology,* 21, (4), pp. 305-324.

Andrews, D., Nonnecke, B. and Preece, J. (2003) 'Electronic survey methodology: A case study in reaching hard-to-involve Internet users', *International Journal of Human-Computer Interaction,* 16, (2), pp. 185 - 210.

Andrews, R., Torgerson, C., Freeman, S. B. A., Locke, T., Low, G., Robinson, A. and Zhu, D. (2006) 'The effect of grammar teaching on writing

development ', *British Educational Research Journal* 32, (1), pp. 39 - 55.

Atkinson, D. (2003) 'Writing and culture in the post-process era', *Journal of Second Language Writing,* 12, (1), pp. 49-63.

Atkinson, D. and Curtis, A. (1998) *A Handbook for Postgraduate Researchers.* Hong Kong: Hong Kong Polytechnic University.

Banaszynski, J. (2000) *Teaching the American Revolution: Scaffolding to Success*. Available at: http://www.educationworld.com/a_curr/curr218.shtml (Accessed: 13 February 2010).

Bandura, A. (1986) *Social Foundations of Thought and Action: a social cognitive theory.* Englewoods Cliff, NJ: Prentice Hall.

Bandura, A. (2001) 'Social cognitive theory: An agentive perspective', *Annual Review of Psychology,* 52, pp. 1-26.

Bannan-Ritland, B. (2002) 'Computer-mediated communication, elearning, and interactivity: a review of the research', *The Quarterly Review of Distance Education,* 3, (2), pp. 161–179.

Barnard, R. and Campbell, L. (2005) 'Sociocultural theory and the teaching of process writing: The scaffolding of learning in a university context', *The TESOLANZ Journal,* 13, pp. 76-88.

Barret, H. C. (2004) *Society for Information Technology & Teacher Education International Conference (SITE) 2004.* Atlanta, GA:AACE.

Barrett, H. C. (2006) *Directions for eportfolio research*. Available at: http://electronicportfolios.org/ (Accessed: 22 December 2010).

Barret, H. C. and Garrett, N. (2009) 'Online personal learning environments: structuring electronic portfolios for lifelong and life-wide learning', *On the Horizon,* 17, (2), pp. 142-152.

Barrett, H. C. (2005) *Researching Electronic Portfolios and Learner Engagement: the reflect initiative*. Available at: http://electronicportfolios.org/reflect/whitepaper.pdf (Accessed: 20 Deceber 2007).

Barton, M. D. (2005) 'The future of rational-critical debate in online spheres', *Computers and Composition,* 22, (1), pp. 177-190.

Bax, S. (2003) 'CALL – past, present and future', *System,* 31, (1), pp. 13-28.

Bauer, R. and Baumgartner, P. (2011) 'Showcase of Learning: Towards a Pattern Language for Working with Electronic Portfolios in Higher Education*', the 16th European Conference on Pattern Languages of Programs (EuroPLoP 2011),*. Irsee Monastery, Bavaria, Germany, July 13 – 17 2011. pp.

Bean, J. C. (2001) *Engaging Ideas: The Professor's Guide to Integrating Writing, Reading, Critical Thinking, and Active Learning in the Classroom* San Francisco, CA: Jossey-Bass.

Behar, R. and Gordon, D. (1995) *Women Writing Culture.* Berkeley, CA: University of California Press.

Beriter, C. and Scardamalia, M. (1987) *The Psychology of Written Composition.* Hillsdale, NJ: Lawrence Erlbaum.

Blackburn, J. L. and Hakel, M. D. (2006) 'Enhancing self-regulation and goal orientation with eportfolios', in Jafari, A. and Kaufman, C.(eds.) *Handbook of research on eportfolios.* Hershey, PA: Idea Group, pp. 83–89.

Bodrova, E. and Leong, D. (1996) *Tools of the Mind: the Vygotskian approach to early childbood education.* Englewood Cliffs, NJ: Merrill.

Boscolo, P. and Hidi, S. (2007) 'The Multiple Meanings of Motivation to Write', in Hidi, S. and Boscolo, P.(eds.) *Writing and Motivation.* Oxford: Elsevier, pp. 1-14.

Bottomley, D. M., Henk, W. A. and Melnick, S. A. (1998) 'Assessing children's views about themselves as writers using the Writer Self-Perception Scale', *Reading Teacher,* 51, (4), pp. 286-295.

Bowler, L., Large, A., Beheshti, J. and Nesset, V. (2005) 'Children and adults working together in the Zone of Proximal Development: a theory for user-centered design*', Canadian Association for Information Science 2005 Annual Conference* The University of Western Ontario, London, Ontario, June 2-4 2005.

Boyce, C. and Neale, P. (2006) *Conducting In-Depth Interview: a guide for designing and conducting In-Depth Interviews for evaluation input.* Pathfinder International Tool Series, monitoring and evaluation

Brace, I. (2004) *Questionnaire Design. How To Plan, Structure And Write Survey Material For Effective Market Research.* London: Kogan Page.

Bradburn, N. M., Sudman, S. and Wansink, B. (2004) *Asking Questions: the definitive guide to questionnaire design : for market research, political polls, and social and health questionnaires.* San Francisco: John Wiley and Sons.

Bransford, J. D., Brown, A. L. and Cocking, R. R. (2000) *How People Learn: brain, mind, experience and school.*Expanded edition Washington, DC: National Academy Press.

Braunsberger, K., Wybenga, H. and Gates, R. (2007) 'A comparison of reliability between telephone and web-based surveys', *Journal of Business Research,* 60, (7), pp. 758–764.

Brine, J. and Franken, M. (2006) 'Students' perceptions of a selected aspect of a computermediated academic writing program: An activity theory

analysis', *Australian Journal of Educational Technology,* 21, (1), pp. 21-38.

Brown, A., Ash, D., Rutherford, M., Nakagawa, K., Gordon, A. and Campione, J. (1993) 'Distributed expertise in the classroom', in Salomon, G.(ed.), *Distributed cognitions: Psychological and educational considerations.* Cambridge: Cambridge University Press, pp. 188-228.

Brown, H. D. (2001) *Teaching by Principles: an interactive approach to language pedagogy.* 2nd ed: New York: Oxford University Press

Brown , H. D. (2007) *Principles of Language Learning and Teaching.*5th ed. White Plains, NY: Pearson Education.

Brown, J. D. (2001) *Using Surveys in Language Programs.* Cambridge: Cambridge University Press.

Bruning, R. and Horn, C. (2000) 'Developing Motivation to Write', *Educational Psychologist,* 35, (1), pp. 25-38.

Bryman, A. (2004) *Social Research Methods.*2nd ed. Oxford: Oxford University Press.

Bryman, A. (2008) *Social Research Methods.*3rd ed. Oxford: Oxford University Press.

Bryman, A. and Cramer, D. (2005) *Quantitative Data Analysis with SPSS 12 and 13: a guide for social scientists.* East Sussex: Routledge.

Butler, P. (2006) 'A Review Of The Literature On Portfolios And Electronic Portfolios', [Online]. Available at: http://www.tss.uoguelph.ca/projects/ePresources/Review%20of%20literature%20on%20portfolios%20and%20eportfolios.pdf. (Accessed: 4 January 2011).

Carifio, J. and Perla, R. (2008) 'Resolving the 50-year debate around using and misusing Likert scales', *Medical Education,* 42 (12), pp. 1150–1152.

Carter, R. and Nunan, D. (eds.) (2001) *The Cambridge guide to teaching English to speakers of other languages.* Cambridge: Cambridge University Press.

Casanave, C. P. (2003) 'Looking ahead to more sociopolitically-oriented case study research in L2 writing scholarship: (But should it be called "post-process"?) ', *Journal of Second Language Writing,* 12, (1), pp. 85-102.

Chang, M. (2007) 'Enhancing web-based language learning through self-monitoring', *Journal of Computer Assisted Learning,* 23, (3), pp. 187-196.

Cheng, H.-F. and Dornyei, Z. (2007) 'The use of motivational strategies in language instruction: The case of EFL teaching in Taiwan', *Innovation in Language Learning and Teaching,* 1, (1), pp. 153-174.

Cheng, Y.-S. (2004) 'A measure of second language writing anxiety: Scale development and preliminary validation', *Journal of Second Language Writing* 13, (4), pp. 313-335.

Chiang, T. (2002) *Collaborative based instruction and L2 writing: How teachers impact the quality of student work in collaborative writing classroom*. thesis. Alliant International University.

Chien, S.-C. (2008) 'A Cognitive Analysis of the Relationships between Chinese EFL Writers' Strategy Use and Writing Achievement Performance', *Cambridge Occasional Papers in Linguistics,* 3, pp. 44-61.

Chou, C., Peng, H. and Chang, C.-Y. (2010) 'The technical framework of interactive functions for course-management systems: Students' perceptions, uses, and evaluations', *Computers & Education,* 55, (3), pp. 1004-1017.

Clark, I. L. (2003) *Concepts in composition: Theory and practice in the teaching of writing*. Mahwah, NJ: Lawrence Erlbaum Associates.

Cocea, M. and Weibelzahl, S. (2006) *The workshop week Lernen - Wissensentdeckung - Adaptivität (LWA2006)*. University of Hildesheim, Hildesheim, 9-11October 2006.

Coe, R. (2002) 'It's the Effect Size, Stupid: What effect size is and why it is important *', the Annual Conference of the British Educational Research Association.* University of Exeter, England, 12-14 September 2002 pp.

Cohen, J. (1988) *Statistical Power Analysis for the Behavioral Sciences.* Newbury Park, CA: Sage Publications.

Cohen, L., Manion, L., Morrison, K. and Morrison, K. R. B. (2007) *Research Methods in Education.*6th ed. Oxon: Routledge.

Coleman, M. C. and Webber, J. (2002) *Emotional and Behavioral Disorders.* Boston, MA.: Pearson Education Company.

Collis, B. and Boer, W. D. (2004) 'Teachers as learners: Embedded tools for implementing a CMS', *TechTrends,* 48, (6), pp. 7-12.

Cooper, M. and Holzman, M. (1989) *Writing as Social Action.* Portsmouth, NH: Boynton.

Coulmas, F. (1999) *The Blackwell Encyclopedia of Writing Systems.* Oxford: Blackwell Publishers Ltd.

Couper, M. P. (2000) 'Web-based surveys: A review of issues and approaches ', *Public Opinion Quarterly,* 64, (4), pp. 464-494.

Couper, M. P., Kapteyn, A., Schonlau, M. and Winter, J. (2007) 'Noncoverage and nonresponse in an Internet survey', *Social Science Research,* 36, (1), pp. 31-148.

Cramer, R. (2001) *Creatie Power: the nature and nurture of children writing* New York, NY: Longman.

Creswell, J. W. (2008) *Educational Research: planning, conducting, and evaluating quantitative and qualitative research* 3rd ed. Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.

Crookes, G. and Schmidt, R. W. (1991) 'Motivation: Reopening the research agenda', *Language Learning,* 41, (4), pp. 469- 512.

Crotty, M. and (2003) *The Foundations of Social Research: meaning and perspective in the research process.* London: Sage Publications.

Crowley, S. (1998) *Composition in the University: historical and polemical essays.* Pittsburgh,PA: University of Pittsburgh Press.

Cumming, A. (1989) 'Writing expertise and second language proficiency', *Language Learning,* 39, (1), pp. 81-135.

Cumming, A. (1990) 'Expertise in evaluating second language compositions', *Language Testing,* 7, (1), pp. 31–51.

Cumming, A. (2003) 'Experienced ESL/EFL writing instructors' conceptualizations of their teaching: curriculum options and implications', in Kroll, B.(ed.), *Exploring the Dynamics of Second Language Writing.* New York: Cambridge University Press, pp. 71–92.

Cumming, A., Kim, T.-Y. and Eouanzoui, K. B. (2007) 'Motivations for ESL Writing Improvement in Pre-University Contexts', in Boscolo, P. and Hidi, S.(eds.) *Writing snd Motivation.* Vol. 19 Oxford: Elsevier, pp. 93–111.

DeKeyser, R., Salaberry, R., Robinson, P. and Harrington, M. (2002) 'What Gets Processed in Processing Instruction? A Commentary on Bill VanPatten's "Processing Instruction: An Update"', *Language Learning,* 52, (4), pp. 805–823.

Denzin, N. K. and Lincoln, Y. S. (2005) *The SAGE Handbook of Qualitative Research.* London: Sage Publications Ltd.

Desmet, C., June Griffin, Deborah Church Miller, Ron Balthazor, and Robert Cummings. (2009) 'Re-visioning Revision with eportfolios in the University of Georgia First-Year Composition Program', in Cambridge, D., Cambridge, B. and Yancey, K.(eds.) *Electronic Portfolios 2.0: Emergent Findings and Shared Questions.* Washington, DC: Stylus Press.

Dillman, D. A., Smyth, J. D. and Christian, L. M. (2009) *Internet, Mail, and Mixed-Mode Surveys: the tailored design method.*3rd ed. Hoboken, NJ: Wiley.

Dodigovic, M. (2005) *Artificial Intelligence in Second Language Learning: raising error awareness.* Clevedon: Multilingual Matters.

Donmoyer, R. and Donmoyer, J. Y. (2008) 'Readers' theatre as a data display strategy', in Knowles, J. G. and Cole, A. L.(eds.) *Handbook of the Arts*

in Qualitative Research: perspectives, methodologies, examples, and issues. Thousand Oaks, CA: Sage Publications, pp. 209-224.

Dornyei, Z. (1994) 'Understanding second language motivation: On with the challenge!', *The Modern Language Journal* 78, (4), pp. 515–523.

Dornyei, Z. (2001) *Teaching and Researching Motivation.* Harlow: Longman.

Dornyei, Z. (2003) *Questionnaires in Second Language Research: construction, administration, and processing.* Mahwah, NJ: Lawrence Erlbaum Associates.

Dornyei, Z. (2007) *Research Methods in Applied Linguistics: quantitative, qualitative, and mixed methodologies.* Oxford: Oxford University Press.

Dornyei, Z., Csizer, K. and Nemeth, N. (2006) *Motivation, Language Attitudes and Globalisation: a Hungarian perspective.* Clevedon: Multilingual Matters.

Dornyei, Z. and Ushioda, E. (2010) *Teaching and Researching Motivation.* 2nd ed. London: Pearson Education Limited.

Doushaq, M. H. and AL Makhzoomy, K. (1989) 'A study of teachers' evaluation of English composition in secondary schools in Jordan', *Arab Journal for the Humanities,* 9, (22), pp. 388-404

Durndel, A. and Haag, Z. (2002) 'Computer self efficacy, computer anxiety, attitudes towards the Internet and reported experience with the Internet, by gender, in an East European sample', *Computers in Human Behavior,* 18, (5), pp. 521-535

Educational Testing Service. (2002) *Languge Edge Courseware: handbook for scoring speaking and writing.* Princeton, NJ: Educational Testing Service.

El-Aswad, A. (2002) *A study of the L1 and L2 writing processes and strategies of Arab learners with special reference to third-year Libyan University students*Unpublished PhD thesis. Newcastle University.

Elbow, P. (1973) *Writing without Teachers.* New York, NY: Oxford University

Ellis, R. (1985) *Understanding Second Language Acquisition.* Oxford: Oxford University Press.

Ellis, R. (2000) 'Task-based Research and Language Pedagogy ', *Language Teaching Research,* 4, (3), pp. 193–220.

Emig, J. (1971) *The Composing Processes of Twelfth Graders.* Urbana, Illinois: National Council of Teachers of English.

Erlandson, D. A., Harris, E. L., Skipper, B. L. and Allen, S. D. (1993) *Doing Naturalistic Inquiry: a guide to methods.* Newbury Park, CA: Sage Publications.

Evans, C. and Gibbons, N. J. (2007) 'The interactivity effect in multimedia learning', *Computers & Education,* 49, (4), pp. 1147–1160.

Ferris, D. R. (2010) 'Second Language Writing Research and Written Corrective Feedback in SLA', *Studies in Second Language Acquisition,* 32, (2), pp. 181-201.

Ferris , D. R. and Hedgcock , J. S. (2005) *Teaching ESL Composition: purpose, process and practice.* Mahwah, NJ Lawrence Erlbaum.

Field, A. (2005) *Discovering Statistics using SPSS.* 2nd ed. London: Sage Publications.

Finlay, L. (2002) 'Negotiating the swamp: the opportunity and challenge of reflexivity in research practice', *Qualitative Research,* 2, (2), pp. 209-230.

Flower, L. and Hayes, J. R. (1981) 'A Cognitive Process Theory of Writing', *College Composition and Communication,* 32, (4), pp. 365-387.

Forman, R. (2008) 'Using notions of scaffolding and intertextuality to understand the bilingual teaching of English in Thailand', *Linguistics and Education* 19, (4), pp. 319–332.

Fotos, S. and Browne, C. (2004) 'The development of CALL and current options', in Fotos, S. and Browne, C.(eds.) *New Perspectives on CALL for Second Language Classrooms.* Mahwah, NJ: Lawrence Erlbaum, pp. 3–14.

Fotos, S. and Browne, C. (eds.)(2004) *New Perspectives on Call for Second Language Classrooms.* Mahwah, NJ Lawrence Erlbaum Associates.

Fraenkel, J. R. and Wallen, N. E. (2003) *How to Design and Evaluate Research in Education.*5th ed. Boston, MA McGraw Hill.

Fricker, J., R. D. (2008) 'Sampling methods for web and e-mail surveys', in Fielding, N., Lee, R. M. and Blank, G.(eds.) *The SAGE Handbook of Online Research Methods.* London: Sage, pp.195-216.

Fulcher, G. and Davidson, F. (2007) *Language Testing and Assessment: an advanced resource book.* Oxon: Routledge.

Fullan, M. (2005) 'The Meaning of Educational Change: A Quarter of a Century of Learning', in Lieberman, A.(ed.), *The Roots of Educational Change.* Springer Netherlands, pp. 202-216.

Gardner, R. C. (1985) *Social Psychology and Language Learning: the role of attitude and motivation.* London: Edward Arnold.

Gardner, R. C. and Lambert, W. E. (1972) *Attitudes and Motivation in Second Language Learning.* Rowley, MA: Newbury House.

Gardner, R. C., Masgoret, A-M., Tennant, J. and Mihic, L. (2004) 'Integrative motivation: Changes during a year-long intermediate level language course', *Language Learning,* 54, (1), pp. 1- 34.

Garland, K. J. and Noyes, J. M. (2004) 'Computer experience: A poor predictor of computer attitudes', *Computers in Human Behavior 20*, (6), pp. 23-32.

Garrett, N., Thoms, B., Alrushiedat, N. and Ryan, T. (2009) 'Social eportfolios as the new course management system', *On the Horizon,* 17, (3), pp. 197- 207.

Gathercoal, P., Love, D., Bryde, B. and McKean, G. (2002) 'On implementing web-based electronic portfolios', *Educause Quarterly,* 25, (2), pp. 29-37.

Gerring, J. (2007) *Case Study Research Principles and Practices.* Cambridge: Cambridge University Press.

Gibbons, P. (2002) *Scaffolding Language, Scaffolding Learning: teaching second language learners in the mainstream classroom.* Portsmouth, NH: Heinemann.

Giddens, A. (1984) *The Constitution of Society: outline of the theory of structuration.* Cambridge: Polity Press.

Goldberg, A., Russell, M. and Cook, A. (2003) 'The effect of computers on student writing: A meta-analysis of studies from 1992 to 2002.', *The Journal of Technology, Learning, and Assessment,* 2, (1), pp. 1-52.

Grabe, W. (2001) 'Notes toward a theory of second language writing', in Silva, T. and Matsuda, P. K.(eds) *On Second Language Writing.* Mahwah, NJ: Lawrence, pp. 39–57.

Grabe, W. and Kaplan, R. B. (1989) 'Writing in a second language: Contrastive rhetoric', in Johnson, D. M. and Roen, D. H.(eds.) *Richness in Writing: empowering ESL students.* White Plains, NY: Longman, pp. 263–283

Grabe, W. and Kaplan, R. B. (1996) *Theory and Practice of Writing.* London: Longman.

Graham, S. and Harris, K. (1998) 'Self-Regulated Strategy Development and the Writing Process: Effects on Essay Writing and Attributions', *Exceptional Children,* 64, (3), pp. 295-312.

Gredler, M. and Shields, C. (2004) 'Does no one read Vygotsky's words? Commentary on Glassman', *Educational Researcher,* 33, (2), pp. 21-25.

Green, S. B. and Salkind, N. J. (2008) *Using SPSS for Windows and Macintosh: analyzing and understanding data* 5th ed. Upper Saddle River: NJ: Pearson Prentice Hall.

Greenfield, P. M. (1999) 'Historical change and cognitive change: A two-decade follow-up study in Zinacantan, a Maya community in Chiapas, Mexico', *Mind, Culture, and Activity,* 6, (2), pp. 92-108.

Griffiths, L. and Nicolls, B. (2010) 'e-Support4U: An evaluation of academic writing skills support in practice ', *Nurse Education in Practice,* 10, (6), pp. 341-348.

Guba, E. G. and Lincoln, Y. S. (2005) ' Qualitative case studies', in Denzin, N. K. and Lincoln, Y. S.(eds.) *The Sage Handbook of Qualitative Research.* 3rd ed. Thousand Oaks, CA: Sage Publications, pp. 191-216.

Halimah, M. (1991) *EST Writing: rhetorically processed and produces: A case study of Kuwaiti learners.* Unpublished PhD thesis. University of Essex.

Hall, T., Kiggins, B. and Weimer, G. (2005) 'E-Portfolios in Teacher Education Using TaskStream*', The 2005 ASCUE Conference.* Myrtle Beach, South Carolina, June 12-16 2005.

Halliday, M. and Hasan, R. (1991) *Language, Context and Text: aspects of language in a social semiotic perspective.* Oxford: Oxford University Press.

Hammann, L. (2005) 'Self-Regulation in Academic Writing Tasks', *International Journal of Teaching and Learning in Higher Education,* 17, (1), pp. 15-26.

Hammersley, M. (1992) *What's Wrong with Ethnography?* London: Routledge.

Hancock, D. R. and Algozzine, B. (2006) *Doing Case Study Research: a practical guide for beginning researchers.* Teachers College Press: New York: NY.

Hardy, C., Phillips, N. and Clegg, S. (2001) 'Reflexivity in organization and management theory: A study of the production of the research 'subject'', *Human Relations,* 54, (5), pp. 31 - 560.

Harrington, S., Rickly, R. and Day, M. (2000) 'Introduction to the online writing classroom: Supporting teachers who are beginning to use technologies to expand notions of literary, power, and teaching', in Harrington, S., Rickly, R. and Day, M.(eds.) *The Online Writing Classroom.* Cresskill, NJ: Hampton Press Inc., pp. 1–14.

Harris, k. R. and Graham, S. (1996) *Making the Writing Process Work: strategies for composition and self-regulation.* Cambridge, MA: Brookline.

Hartley, J. (1998) *Learning and Studying. A Research Perspective.* London: Routledge.

Hartman, H. (2002) *Scaffolding & cooperative learning*. Available at: http://condor.admin.ccny.cuny.edu/~hhartman/c3clsc.html (Accessed: 22 April 2009).

Hayes, J. and Flower, L. (1983) 'Uncovering cognitive processes in writing: An introduction to protocol analysis', in Mosenthal, P., Tamor, L. and Walmsley, S.(eds.) *Research on Writing: principles and methods.* New York: Longman.

Hayes, J. and Nash, J. (1996) 'On the nature of planning in writing', in Levy, C. M. and Ransdell, S.(eds.) *The Science of Writing.* Mahwah, NJ: Lawerance Erlbaum, pp. 29-55.

Healy, M. and Perry, C. (2000) 'Comprehensive criteria to judge validity and reliability of qualitative research within the realism paradigm', *Qualitative Market Research: An International Journal,* 3, (3), pp. 118 - 126.

Henning, G. (1987) *A Guide to Language Testing.* Cambridge, MA: Newbury House.

Hesse-Biber, S. N. and Leavy, P. L. (2006) *Emergent Methods in Social Research.* London: Sage Publications.

Hewitt, J. (2003) 'How habitual online practices affect the development of asynchronous discussion threads', *Journal of Educational Computing Research,* 28, (1), pp. 31–45.

Hidi, S. (1990) 'Interest and its contribution as a mental resource for learning', *Review of Educational Research,* 60, (4), pp. 549- 571.

Hidi, S. and Renninger, K. A. (2006) 'The four-phase model of interest development', *Educational Psychologist,* 41, (2), pp. 111-127.

Hill, J. R., Song, L. and West, R. E. (2009) 'Social Learning Theory and Web-Based Learning Environments: A Review of Research and Discussion of Implications', *American Journal of Distance Education,* 23, (2), pp. 88 — 103.

Himpsl, K. and Baumgartner, P. (2010) 'Evaluation of E-Portfolio Systems ', in Buzzetto-More, N.(ed.), *The E-Portfolio Paradigm: informing, educating, assessing, and managing with E-Portfolios.* Santa Rosa CA: Informing Science Press, pp. 19-34.

Hiradhar, P. and Gray, J. (2008) 'From a social digital identity to an academic digital identity: Introducing eportfolios in English language enhancement courses', *Canadian Journal of Learning and Technology / La revue canadienne de l'apprentissage et de la technologie*, 34, (3), [Online]. Available at: http://www.cjlt.ca/index.php/cjlt/article/view/503 (Accessed: 24 April 2009)

Hirumi, A. (2009) ' A framework for analyzing, designing and sequencing planned elearning interactions', in Orellana, A., Hudgins, T. L. and Simonson, M.(eds) *The Perfect Onlinecourse: best practices for designing and teaching* Charlotte, NC: Information Age Publishing, pp. 201–228.

Hirvela, A. and Pierson, H. (2000) 'Portfolios: Vehicles for authentic self-assessment', in Ekbatani, G. V. and Pierson, H. D.(eds.) *Learner-directed Assessment in ESL.* Mahwah, NJ: Lawrence Erlbaum Associates, pp. 105-126.

Holmes, N. (2004) *The Use of a Process-oriented Approach to Facilitate the Planning and Production Stages of Writing for Adult students of English as a Foreign or Second Language*. Available at: http://www.developingteachers.com/articles_tchtraining/processw1_nicola.htm (Accessed: 23 Aprill 2009).

Homstad, T. and Thorson, H. (2000) 'Writing and foreign language pedagogy: Theories and implications', in Bräuer, G.(ed.), *Writing Across Languages*. Stamford, CT: Ablex Publishing., pp. 3-14.

Honeycutt, R. L. and Pritchard, R. J. (2005) 'Using a structured writing workshop to help good readers who are poor writers', in Rijlaarrsdan, G., Berg, H. v. d. and Couzijin, M.(eds.) *Effective Teaching and Learning of Writing*. 2nd ed. Vol. 14 Amsterdam: Kluwer, pp. 141–150.

Hu, G. (2005) 'Using peer review with Chinese ESL student writers', *Language Teaching Research* 9, (3), pp. 321-342.

Huang, M.-c. (2004) *The use of process writing and internet technology in a Taiwanese college English writing class: A focus on peer reviews*. Unpublished PhD thesis. The Pennsylvania State University.

Hubert, M. D. and Bonzo, J. D. (2010) 'Does second language writing research impact U.S. university foreign language instruction?', *System,* 38, (4), pp. 517-528.

Hughes, A. (2003) *Testing for Language Teachers*. Cambridge: Cambridge University Press.

Hyland, K. (2001) *Teaching and Researching Writing*. Harlow: Longman.

Hyland, K. (2003) 'Genre-based pedagogies: A social response to process', *Journal of Second Language Writing,* 12, (1), pp. 17-19.

Hyland, K. and Hyland, F. (2006) *Feedback in Second anguage Writing: contexts and issues*. New York: Cambridge University Press.

Ingram, B. and King, C. (2004) *From Writing to Composition: an introductory composition course.*second ed. New York, NY: Cambridge University Press.

Jafari, A. (2004) 'The "Sticky" eportfolio System. Tackling Challenges and Identifying Attributes', *EDUCAUSE Review,* 39, (4), pp. 38–49.

Jafari, A. and Kaufman, C. (2006) *Handbook of Research on Eportfolios*. London: Idea Group.

Jamieson, J. and Chapelle, C. A. (2010) 'Evaluating CALL use across multiple contexts', *System,* 38, (3), pp. 357-369.

Jawahar, I. M. and Elango, B. (2001) 'The effects of attitudes, goal setting and selfefficacy on end user performance', *Journal of End User Computing.,* 13, (2), pp. 40-45.

Johnson, B. and Turner, L. (2003) 'Data collection strategies in mixed methods research', in Tashakkori, A. and Teddlie, C.(eds.) *Handbook of Mixed Methods in Social & Behavioral research*. Thousand Oaks, California: Sage, pp. 297-319.

Joinson, A. N. and Reips, U.-D. (2007) 'Personalized salutation, power of sender and response rates to Web-based surveys', *Computers in Human Behavior,* 23, (3), pp. 1372 – 1383.

Jones, S. J. (2006) *Blogging and ESL Writing: A Case Study of how students responded to the use of weblogs as a pedagogical tool for the Writing Process Approach in a Community College ESL Writing Class.* Unpublished PhD thesis. University of Texas at Austin.

Joppe, M. (2000) *The Research Process*. Available at: http://www.ryerson.ca/~mjoppe/rp.htm (Accessed: 23 Octber 2008).

Kaplan, R. B. (1988) 'Contrastive rhetoric and second language learning: Notes towards a theory of contrastive rhetoric', in Purves, A.(ed.), *Writing Across Languages and Cultures: issues in contrastive rhetoric.* Newbury Park, CA: Sage, pp. 275-304.

Kawauchi, C. (2005) 'The effects of strategic planning on the oral narratives of learners with low and high intermediate L2 proficiency', in Ellis, R.(ed), *Planning and Task Performance in Second Language Learning*. Amsterdam: Benjamins, pp. 143–164.

Kent, T. (ed.) (1999) *Post-Process Theory: beyond the writing-process paradigm*. Carbondale, IL: Southern Illinois University Press.

Klassen, R. (2002) ' Writing in early adolescence: A review of the role of self-efficacy beliefs', *Educational Psychology Review,* 14, (2), pp. 173-203.

Kreijns, K., Kirschner, P. A. and Jochems, W. (2003) 'Identifying the pitfalls for social interaction in computer-supported collaborative learning environments: a review of the research ', *Computers in Human Behavior* 19, (3), pp. 335 - 353.

Kvale, S. (2009) *InterViews : learning the craft of qualitative research interviewing*. 2nd ed. Thousand Oaks, CA: Sage Publications.

Rosnow, R. L. and Rosenthal, R. (2005) *Beginning Behavioural Research: a conceptual primer*.5th ed. Engelwood Cliffs, NJ: Pearson/Prentice Hall

Lamy, M.-N. and Hampel, R. (2007) *On-line Communication in Language Learning and Teaching*. Basingstoke: Palgrave Macmillan

Lantolf, J. P. (2000) 'Second language learning as a mediated process', *Language Teaching,* 33, (2), pp. 79-96.

Lantolf, J. P. (2006) 'Sociocultural theory and L2', *Studies in Second Language Acquisition,* 28, (1), pp. 67–109.

Larson-Hall, J. (2010) *A Guide to Doing Statistics in Second Language Research Using SPSS*. Oxon: Routledge.

Lee, G. and Schallert, D. L. (2008) 'Meeting in the margins: Effects of the teacher–student relationship on revision processes of EFL college students taking a composition course', *Journal of Second Language Writing* 17, (3), pp. 165-182.

Lefkowitz, N. (2009) 'Colloquium: the future of foreign language writing', *The 2009 Symposium on second language writing*. Tempe, AZ.

Lei, X. (2008) 'Exploring a sociocultural approach to writing strategy research: Mediated actions in writing activities', *Journal of Second Language Writing,* 17, (4), pp. 217–236.

Lichtman, M. (2010) *Qualitative Research in Education: a user's guide.*2nd ed. Thousand Oaks, CA: Sage Publications, Inc.

Lipstein, R. L. and Renninger, K. A. (2007) '"Putting Things into Words" : The Development of 12–15-Year-Old Students' Interest for Writing', in Boscolo, P. and Hidi, S.(eds) *Writing and Motiation.* Vol. 19 Oxford: Elsevier, pp. 113–140.

Llieva, J., Baron, S. and Healey, N. M. (2002) 'Online surveys in marketing research: Pros and cons', *International Journal of Market Research,* 44, (3), pp. 361-367.

Lockyer, S. (2004) 'Coding Qualitative Data', in Lewis-Beck, M. S., Bryman, A. and Liao, T. F.(eds.) *The Sage Encyclopedia of Social Science Research Methods.* Vol. 1 Thousand Oaks, CA: Sage Publications, pp. 137-138.

Lopes, V. (2008) 'Course Management Systems and Campus-Based Learning', *Canadian Society for the Study of Higher Education*, (29), [Online]. Available at: http://www.csshe-scees.ca/pf/PF_29_Lopes.pdf (Accessed: 8 July 2009).

Lopez-Fernandez, O. and Rodriguez-Illera, J. (2009) 'Investigating university students' adaption to a digital learner course portfolio', *Computers and Education* 52, (3), pp. 608-616.

Love, T. and Cooper, T. (2004) 'Designing online information systems for portfolio-based assessment: Design criteria and heuristics', *Journal of Information Technology Education,* 3, pp. 65-81.

MacArthur, C. A., Graham, S. and Fitzgerald, J. (eds.) (2008) *Handbook of Writing Research.* New York, NY: The Guilford Press.

MacDonald, L., Liu, P., Lowell, K., Tsai, H. and Lohr, L. (2004) 'Part One Graduate student perspectives on the development of electronic portfolios', *TechTrends,* 48, (3), pp. 52-55.

Madge, C. (2006) *Online questionnaires: Sampling issues.* Available at: http://www.geog.le.ac.uk/orm/ethics/ethprint3.pdf (Accessed: 19 November 2008).

Madge, C. and O'Connor, H. (2002) 'Online with e-mums: Exploring the Internet as a medium for research', *Area* 34, (1), pp. 92-102.

Malikowski, S. (2008) 'Factors related to breadth of use in course management systems', *Internet and Higher Education,* 11, (2), pp. 81-86.

Malikowski, S. R., Thompson, M. E. and Theis, J. G. (2007) 'A model for research into course management systems: Bridging technology and learning theory', *Journal of Educational Computing Research,* 36, (2), pp. 149-173.

Manchón, R. M., Murphy, L. and Roca, J. (2007) 'Lexical Retrieval Processes and Strategies in Second Language Writing: A Synthesis of Empirical Research', *International Journal of English Studies,* 7, (2), pp. 149-174.

Marsh, G. E. and Ketterer, J. J. (2005) 'Situating the Zone of Proximal Development', *Journal of Distance Learning Administration,* 8, (2).

Marsh, H. W. (1990) 'The structure of academic self-concept: The Marsh/Shavelson model', *Journal of Educational Psychology,* 82, (4), pp. 623 - 636.

Marsh, H. W. and Craven, R. G. (2006) 'Reciprocal Effects of Self-Concept and Performance From a Multidimensional Perspective: Beyond Seductive Pleasure and Unidimensional Perspectives', *Perspectives on Psychological Science,* 1, (3), pp. 133-163.

Masiello, I., Ramberg, R. and Lanka, K. (2005) 'Attitudes to the application of a Webbased learning system in a microbiology course', *Computers & Education,* 45, (2), pp. 171-185.

Mason, J. (2002) *Qualitative researching.*2nd ed London: Sage Publications.

Matsuda, P. K. (2003) 'Process and post-process: A discursive history', *Journal of Second Language Learning,* 12, (1), pp. 65-83.

Matsuda , P. K. (2006) 'Second-language writing in the twentieth century: A situated historical perspective', in Matsuda, P. K., Cox, M., Jordan, J. and Ortmeier-Hooper, C.(eds.) *Second-language Writing in the Composition Classroom: a critical sourcebook.* Boston: Bedford/St Martins.

McAllister, L., Hallam, G. and Harper, W. (2008) 'The ePortfolio as a tool for lifelong learning: Contextualising Australian practice*', International Lifelong Learning Conference 2008.* Yeppoon, Queensland, pp. 246-252.

McKenzie, J. (2000) *Beyond Technology: questioning, research and the information literate school.* Bellingham, WA: FNO Pess.

Merriam, S. B. (2001) *Qualitative Research and Case Study Applications in Education.* San Francisco, CA: Jossey-Bass.

Mertens, D. M. (2005) *Research and Evaluation in Education and Psychology: integrating diversity with quantitative, qualitative and mixed methods.* Thousand Oaks, CA: Sage.

Meyer, E., Abrami, P. C., Wade, C. A., Aslan, O. and Deault, L. (2010) 'Improving literacy and metacognition with electronic portfolios: Teaching and learning with ePEARL', *Computers & Education,* 55, (1), pp. 84- 91.

Miles, M. B. and Huberman, A. M. (1994) *Qualitative Data Analysis: an expanded source book.*2nd ed. Thousand Oaks, CA: Sage Publcations.

Mills, N. A. and Péron, M. (2009) 'Global simulation and writing self-beliefs of college intermediate French students', *International Journal of Applied Linguistics* 156, (Special Issue on Learning and Teaching L2 Writing), pp. 239-273.

Mishler, E. G. (1986) *Research Interviewing: context and narrative.* Cambridge, MA: Harvard University Press.

Mitchell, R. and Myles, F. (2004) *Second Language Learning Theories.*2nd ed. London: Hodder Arnold.

Narciss, S., Proske, A. and Koerndle, H. (2007) 'Promoting self-regulated learning in web-based learning environments', *Computers in Human Behavior,* 23, (3), pp. 1126-1144.

Norris-Holt, J. (2001) 'Motivation as a Contributing Factor in Second Language Acquisition', *TESL Journal* 7, (6), [Online]. Available at: http://iteslj.org/Articles/Norris-Motivation.html (Accessed: 17 January 2009)

Nuckles, M., Hubner, S. and Renkl, A. (2009) 'Enhancing self-regulated learning by writing learning protocols', *Learning and Instruction* 19, (3), pp. 259- 271.

Nurmela, K., Lehtinen, E. and Palonen, T. (1999) 'Evaluating CSCL log files by social network analysis*', the Computer Support for Collaborative Learning (CSCL) 1999 Conference.* Stanford University, Palo Alto, CA, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 434-444.

O'Lear, R. M. (1996) 'Using electronic mail (e-mail) surveys for geographic research: Lessons from a survey of Russian environmentalists', *Professional Geographer,* 48, (2), pp. 209 - 217.

Ohta, A. S. (2001) *Second Language Acquisition Processes in the Classroom: learning Japanese.* Mahwah, NJ: Lawrence Erlbaum Associates.

Olson, D. R. (1996) 'Literate mentalities: Literacy, consciousness of language, and modes of thought', in Olson, D. R. and Torrance, N.(eds.) *Modes of Thought: explorations in culture and cognition.* Cambridge: Cambridge University Press, pp. 141-151.

Oppenheim, A. N. (1966) *Questionnaire Design and Attitude Measurement.* New York: Basic Books.

Oppenheim, A. N. (1992) *Questionnaire Design, Interviewing and Attitude Measurement.* London: Pinter.

Osuna, M. (2000) 'Promoting foreign culture acquisition via the Internet in a sociocultural context', *Journal of Educational Computing Research,* 22, (3), pp. 323-345.

Oxford, R. and Shearin, J. (1994) 'Language learning motivation: Expanding the theoretical framework', *The Modern Language Journal,* 78, (1), pp. 12- 28.

Paulus, T. M. (1999) 'The effect of peer and teacher feedback on student writing', *Journal of Second Language Writing,* 8, (3), pp. 265-289.

Pajares, F. (2003) 'Self-efficacy beliefs, motivation and achievement in writing: A review of the literature', *Reading and Writing Quarterly 19*, (2), pp. 139-158.

Pajares, F. and Valiante, G. (2006) 'Self-efficacy beliefs and motivation in writing development', in MacArthur, C. A., Graham, S. and Fitzgerald, J.(eds.) *Handbook of Writing Research.* New York, NY: The Guilford Press, pp. 158-170.

Patton, M. Q. (2002) *Qualitative Research and Evaluation Methods.*3rd ed. Thousand Oaks, CA: Sage Publications.

Perry, F. L. (2005) *Research in Applied Linguistics: becoming a discerning consumer.* Mahwah, NJ: Lawrence Erlbaum Associates.

Pintrich, P. R. and H, S. D. (1996) *Motivation in Education: Theory, research and applications.* Englewood Cliffs, NJ: Merrill/Prentice Hall.

Poehner, M. E. and Lantolf, J. P. (2005) 'Dynamic assessment in the language classroom', *Language Teaching Research,* 9, (3), pp. 233–265.

Porto, M. (2001) 'Cooperative writing response groups and self-evaluation', *ELT Journal,* 55, (1), pp. 38–46.

Prat-Sala, M. and Redford, P. (2010) 'The interplay between motivation, self-efficacy, and approaches to studying', *British Journal of Educational Psychology,* 80, (2), pp. 283-305.

Pritchard, R. and Honeycutt, R. L. (2008) 'The Process Approach to Writing: Examining Its Effectiveness', in MacArthur, C. A., Graham, S. and Fitzgerald, J.(eds.) *Handbook of Writing Research.* New York, NY: The Guilford Press, pp. 83-95.

Puntambekar, S. and Hubscher, R. (2005) 'Tools for scaffolding students in a complex learning environment: What have we gained and what have we missed?', *Educational Psychologist,* 40, (1), pp. 1-12.

Raimes, A. (1985) 'What unskilled ESL students do as they write: Aclassroom study of composing', *TESOL Quarterly 19*, (2), pp. 229-258.

Randall, B., Sweetin, J. and Steinbeiser, D. (2010) *Learning Management System: Feasibility Study*. Available at: http://oscmoodlereport.files.wordpress.com/2010/08/osc_feasibility_study_full_report.pdf (Accessed: 7 November 2010).

Ransdell, S. and Barbier, M-L. (2002) 'An Introduction to New Directions for Research in L2 Writing', in Ransdell, S. B., M.-L. (ed.), *New Directions for Research in L2 Writing.* Dordrecht: Kluwer Academic Publishers, pp. 1-10.

Reid, J. M. (1993) *Teaching ESL writing.* Englewood Cliffs, NJ: Regents/Prentice Hall.

Renninger, K. A. and Hidi, S. (2002) 'Student interest and achievement: Developmental issues raised by a case study', in Wigfield, A. and Eccles, J. S.(eds.) *Development of Achievement Motivation.* San Diego, CA: Academic Press, pp. 175-195.

Richardson, H. (2009) *E-portfolios supporting employer engagement and workforce development: An evidence-informed account of how e-portfolio practice has demonstrated relevance to adult, employment-based learners*. Available at: http://www.recordingachievement.org/employers-cpd/he5p/project/reports/callelement/he5p-literature-and-practice-review/pdf_download/download.raw (Accessed: 11 July 2010).

Roberts, F. and Cimasko, T. (2008) 'Evaluating ESL: Making sense of university professors'responses to second language writing', *Journal of Second Language Writing,* 17, (3), pp. 125–143.

Robinson, P. (2003) 'Attention and memory during SLA', in Doughty, C. and Long, M.(eds) *The Handbook of Second Language Acquisition.* Oxford: Blackwell, pp. 631-678.

Robson, C. (2002) *Real World Research: a resource for social scientists and practitioner researchers.* 2nd ed. Oxford: Blackwell Publishers.

Roca de Larios, J., Manchon, R. M., Murphy, L. and Marin, J. (2008) 'The foreign language writer's strategic behavior in the allocation of time to writing processes', *Journal of Second Language Writing,* 17, (1), pp. 30- 47.

Rogers, E. M. (1983) *Diffusion of Innovations.* New York, NY: The Free Press.

Roussos, P. (2007) 'The Greek computer attitude scale: Construction and assessment of psychometric properties', *Computers in Human Behavior,* 23, (1), pp. 578-590.

Rubin, H. J. and Rubin, I. (2005) *Qualitative Interviewing: the art of hearing data.*2nd ed. London: Sage Publications.

Ryan, R. and Deci, E. (2000) 'Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being', *American Psychologist,* 55, pp. 68-78.

Sampson, H. (2004) 'Navigating the waves: the usefulness of a pilot in qualitative research December 2004 4: 383-402,' *Qualitative Research,* 4, (3), pp. 383 - 402.

Sandelowski, M. (2003) 'Tables or tableaux? The challenges of writing and reading mixed methods studies', in Tashakkori, A. and Teddlie, C.(eds.) *Handbook of Mixed Methods in Social & Behavioral Research.* Thousand Oaks, California: Sage, pp. 297-319.

Santos, T. (1992) 'Ideology in composition: L1 and ESL', *Journal of Second Language Writing,* 1, (1), pp. 1-15.

Sasaki, M. (2004) 'A multi-data analysis of the 3.5-year development of EFL student writers', *Language Learning,* 54, (3), pp. 515-582.

Scardamalia, M. and Bereiter, C. (1986) 'Research on Written Composition', in Wittrock, M.(ed), *Handbook of Research on Teaching.* 3rd ed., London: Macmillan, pp. 778-803.

Schmidt, R. (2001) 'Attention', in Robinson, P.(ed.), *Cognition and Second Language Instruction.* Cambridge: Cambridge University Press, pp. 3-32.

Schofield, J. W. (1990) 'Increasing the generalizability of qualitative research', in Eisner, E. and Peshkin, A.(eds.) *Qualitative Inquiry in Education: the continuing debate.* New York, NY: Teachers College Press, pp. 201-232.

Schümmer, T., Strijbos, J. W. and Berkel, T. (2005) 'Measuring group interaction during CSCL', in Koschmann, T., Suthers, D. and Chan, T. W.(eds.) *Computer Supported Collaborative Learning 2005: the next 10 years!* Mahwah, NJ: Lawrence Erlbaum Associates, pp. 567–576.

Schunk, D. H. and Pajares, F. (2002) 'The development of academic self-efficacy.', in Wigfield, A. and Eccles, J. S.(eds.) *Development of Achievement Motivation.* San Diego, CA: Academic Press, pp. 25- 31.

Shayer, M. (2002) 'Not just Piaget, not just Vygotsky, and certainly not Vygotsky as an alternative to Piaget', in Adey, P. and Shayer, M.(eds.) *Learning Intelligence, Cognitive Acceleration Across the Curriculum from 5 to 15 years.* Buckingham: Open University Press, pp. 179-195.

Shea, P. and Bidjerano, T. (2010) 'Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments ', *Computers & Education,* 55, (4), pp. 1721-1731.

Sherman, G. and Byers, A. (2011) 'Electronic Portfolios in the Professional Development of Educators', in D'Agustino, S.(ed.), *Adaptation, Resistance and Access to Instructional Technologies: assessing future trends in education.* Hershey, PA: Information Science Reference, pp. 429-444.

Shih, K.-C. (1989) *An assessment of attitudes toward computer-assisted instruction and knowledge of interactive videodisc among college students in taiwan, the republic of china.* Unpublished PhD thesis. Southern Illinois University at Carbondale.

Silva, T. (1990) 'Second language composition instruction: developments, issues, and directions', in Kroll, B.(ed.), *Second Language Writing: research insights for the classroom.* Cambridge: Cambridge University Press., pp. 11–23.

Silva, T. (1992) 'Ll vs. L2 Writing: ESL Graduate Students' Perceptions', *TESL Canada Journal,* 10, (1), pp. 27-47.

Silva, T., Leki, I. and Carson, J. (1997) 'Broadening the Perspective of Mainstream Composition Studies: Some Thoughts from the Disciplinary Margins', *Written Communication,* 14, (3), pp. 398-428.

Silva, T. and Leki, I. (2004) 'Family matters: The influence of applied linguistics and composition studies on second language writing studies–past, present, and future', *Modern Language Journal,* 88, (1), pp. 1-13.

Silverman, D. (2010) *Interpreting Qualitative Data: methods for analyzing talk, text and interaction.*3rd ed. London: Sage Publications.

Simpson, J. (2005) 'Learning Electronic Literacy Skills in an Online Language Learning Community', *Computer Assisted Language Learning,* 18, (4), pp. 327 – 345.

Sjöholm, K. (2004) 'The complexity of the learning and teaching of EFL among Swedish-minority students in bilingual Finland', *Journal of Curriculum Studies* 36, (6), pp. 685- 696.

Squire, J. R. (2003) 'The history of the profession', in Flood, J., Lapp, D., Squire, J. R. and Jensen, J.(eds.) *Handbook of Research on Teaching the English Language Arts.* 2nd ed. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Stahl, G. (2001) 'Rediscovering CSCL', in Koschmann, T., Hall, R. and Miyake, N.(eds.) *CSCL2: carrying forward the conversation,.* Hillsdale, NJ: Lawrence Erlbaum Association, pp. 169-181.

Stahl, G. (2006) *Group Cognition.* Cambridge, MA: MIT Press.

Stake, R. (2005) ' Qualitative case studies', in Denzin, N. K. and Lincoln, Y. S.(eds.) *The Sage Handbook of Qualitative Research.* 3rd ed. Thousand Oaks, CA: Sage, pp. 433-466.

Stapleton, P. (2010) 'Writing in an electrnic age: A case study of L2 composing processes', *Journal of English for Academic Purposes,* 9, (4), pp. 295-307.

Stefani, L., Mason, R. and Pegler, C. (2007) *The Educational Potential of E-portfolios: supporting personal development and reflective learning.* Oxon: Routledge.

Steward, M. and Cheung, M. (1989) 'Introducing a process approach in the teaching of writing in Hong Kong', *ILE Journal,* 6, pp. 41-48.

Strauss, A. and Corbin, J. (1998) *Basics of Qualitative rRsearch: grounded theory procedures and techniques* 2nd ed. Thousand Oaks, CA: Sage Publications Inc.

Sutherland, S. and Powell, A. (2007) 'CETIS SIG mailing list discussions', [Online]. Available at: http://www.jiscmail.ac.uk/archives/cetisportfolio.html, July 9 2007 (Accessed: 2 January 2011).

Sweat-Guy, R. and Buzzetto-More, N. A. (2007) 'A comparative analysis of common e-portfolio features and available platforms', *The Journal of Issues in Informing Science and Information Technology,* 4, pp. 327-342.

Taylor, H. (2000) 'Does Internet research work?', *International Journal of Market Research,* 41, (1), pp. 51- 63.

Tolchinsky, L. (2008) 'The Emergence of Writing', in MacArthur, C. A., Graham, S. and Fitzgerald, J.(eds.) *Handbook of Writing Research.* New York, NY: The Guilford Press, pp. 83-95.

Tribble, C. (1996) *Writing.* Oxford: Oxford University Press.

Tuzi, F. (2004) 'The impact of e-feedback on the revisions of L2 writers in an academic writing course', *Computers and Composition,* 21, (2), pp. 217-235.

Umbach, P. D. (2004) 'Web surveys: Best practices', *New Directions in Institutional Research 20*04, (121), pp. 23-38.

Usher, E. L. and Pajares, F. (2008) 'Sources of Self-Efficacy in School: Critical Review of the Literature and Future Directions', *Review of Educational Research,* 78, (4), pp. 751-796.

Valdez, P. N. (2010) 'Reflections on Using the Digital Portfolio in Academic Writing in a Philippine University: Problems and Possibilities', *Philippine ESL Journal,* 5, pp. 160-170.

Van Gennip, N. A. E., Segers, M. S. R. and Tillema, H. H. (2010) 'Peer assessment as a collaborative learning activity: the role of interpersonal variables and conceptions', *Learning and Instruction 20*, (4), pp. 280- 290.

van Lier, L. (1996) *Interaction in the Language Curriculum: awareness, autonomy & authenticity.* London: Longman.

van Lier, L. (2004) *The Ecology and Semiotics of Language Learning: a sociocultual perspective.* Boston, MA: Kluwer Academic Publishers.

VanPatten, B. (2002) 'Processing Instruction: An Update', *Language Learning,* 52, (4), pp. 755–803.

Vansteenkiste, M., Simons, J., Lens, W., Soenens, B. and Matos, L. (2005) 'Examining the motivational impact of intrinsic versus extrinsic goal framing and autonomysupportive versus internally controlling

communication style on early adolescents' academic achievement', *Child Development,* 76, (2), pp. 483–501.

Vaske, J. J., Gliner, J. A. and Morgan, G. A. (2002) 'Communicating judgments about practical significance: Effect size, confidence intervals and odds ratios', *Human Dimension of Wildlife,* 7, (4), pp. 287-300.

Vollmer, G. (2002) 'Sociocultural perspectives on second language writing', *ERIC Clearning House on Language and Linguistics: News Bulletin,* 25, (2), pp. 1-3.

Vygotsky, L. S. (1978) *Mind in Society: the development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1987) 'The collected works of L. S. Vygotsky (Vol. 1)', in Carton, R. W. R. A. S.(ed.), *Problems of General Psychology.* New York: Plenum Press.

Vygotsky, L. S. (1999) 'Tool and Sign in the Development of the Child', in Rieber, R. W.(ed.), *The Collected Works of L.S. Vygotsky.* Vol. 6 New York, NY: Plenum Press, pp. 1-68.

Wade, A., Abrami, P. and Sclater, J. (2005) 'An Electronic Portfolio to Support Learning', *Canadian Journal of Learning and Technology / La revue canadienne de l'apprentissage et de la technologie*, 31, (3), [Online]. Available at: http://www.cjlt.ca/index.php/cjlt/article/view/94/88 (Accessed: 8 May 2009).

Walker, B. J. (2003) 'The cultivation of student self-efficacy in reading and writing', *Reading & Writing Quarterly: Overcoming Learning Difficulties 19*, (2), pp. 173–187.

Wang, W. and Wen, Q. (2002) 'L1 use in the L2 composing process: An exploratory study of 16 Chinese EFL writers', *Journal of Second Language Writing,* 11, (3), pp. 225-246.

Warschauer, M. (2000) 'CALL for the 21st Century*', IATEFL and ESADE Conference.* Barcelona, Spain, 2 July 2000. pp.

Warschauer, M. (2007) 'Technology and writing', in Cummins, J. and Dvison, C.(eds.) *International Handbook of English Language Teaching.* New York: Springer, pp. 907-918.

Warschauer, M. and Healey, D. (1998) 'Computers and language learning: an overview', *Language teaching,* 31, (2), pp. 57-71.

Weigle, S. C. (2002) *Assessing Writing.* Cambridge: Cambridge University Press.

Weir, C. (2005) *Language Testing and Validation: an evidence-based approach.* Hampshire: Palgrave Macmillan.

Wells, G. (1999) *Dialogic Inquiry: towards a sociocultural practice and theory of education.* Cambridge: Cambridge University Press.

Wennergren, A.-C. and Roumlnnerman, K. (2006) 'The relation between tools used in action research and the zone of proximal development ', *Educational Action Research,* 14, (4), pp. 547 - 568.

Wette, R. (2010) 'Evaluating student learning in a university-level EAP unit on writing using sources', *Journal of Second Language Writing 19*, (3), pp. 158-177.

Wigfield, A. and Eccles, J. S. (2000) 'Expectancy–Value Theory of Achievement Motivation', *Contemporary Educational Psychology,* 25, (1), pp. 68-81.

Willig, C. (2008) *Introducing Qualitative Research in Psychology: adventures in theory and method.*2nd ed. Berkshire: McGraw-Hil.

Winnips, J. C. (2001) *Scaffolding-by-design as a model for online learner support*. Available at: http://www.ub.utwente.nl/webdocs/to/1/t000000e.pdf (Accessed: 15 September 2009).

Winter, J. C. F. d. and Dodou, D. (2010) 'Five-Point Likert Items: t test versus Mann-Whitney-Wilcoxon', *Practical Assessment, Research & Evaluation*, 15, (11), [Online]. Available at: http://pareonline.net/pdf/v15n11.pdf (Accessed: 11 November 2010).

Wolfersberger, M. (2003) 'L1 to L2 writing process and strategy transfer: A look at lower proficiency writers', *Teaching English as a Second Language-Electronic Journal,* 7, (2).

Wood, D., Bruner, J. S. and Ross, G. (1976) 'The role of tutoring in problem solving', *Journal of Child Psychology and Psychiatry,* 17, (2), pp. 89-100.

Woodall, B. R. (2002) 'Language-switching: Using the first language when writing in a second language', *Journal of Second Language Writing,* 11, (1), pp. 7–28.

Wright, K. B. (2005) 'Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services ', *Journal of Computer-Mediated Communication*, 10, (3), [Online]. Available at: http://jcmc.indiana.edu/vol10/issue3/wright.html (Accessed: 23 March 2010).

Yang, R. P., Noels, K. A. and Saumure, K. D. (2006) 'Multiple routes to cross-cultural adaptation for international students: Mapping the paths between self-construals, English language confidence and adjustment', *International Journal of Intercultural Relations,* 30, (4), pp. 487–506.

Yin, R. K. (2003) *Case Study Research: design and methods.*3rd ed., Thousand Oaks, CA: Sage Publications.

You, X. (2004) 'The choice made from no choice: English writing instruction in a Chinese university', *Journal of Second Language Writing,* 13, (2), pp. 97-110.

Zenkov, K. and Harmon, J. (2009) 'Picturing a writing process: Photovoice and teaching writing to urban youth', *Journal of Adolescent & Adult Literacy,* 52, (7), pp. 575-584.

Zito, J. R., Adkins, M., Gavins, M., Harris, K. R. and Graham, S. (2007) 'Self-Regulated Strategy Development: Relationship to the Social-Cognitive Perspective and the Development of Self-Regulation', *Reading & Writing Quarterly,* 23, (1), pp. 77-95.

Zimmerman, B. J. (2000) 'Attaining self-regulation: A social cognitive perspective. In Boekaerts,' in M.Boekaerts, Pintrich, P. R. and ZeidnerM, M.(eds) *Handbook of Self-Regulation.* San Diego, CA: Academic Press, pp. 13–39.

Zimmerman, B. J. (2002) 'Becoming a self-regulated learner: An overview', *Theory into Practice,* 41, (2), pp. 64 - 70.

Zimmerman, B. J. (2008) 'Investigating selfregulated and motivation: Historical background, methodological development, and future prospects', *American Educational Research Journal,* 45, (1), pp. 166-183.

Appendix A: The criteria checklist for the evaluation of E-portfolio software

Essential criteria
Input of keywords
Internal cross-references
External cross-references
Publication on the web
Pricing and licence schemes
Simple data export
Support of all currently used browsers
Collecting, organizing, selecting
Simple data import
Comfortable data import
Searching, sequencing and filtering
Annotations to files
Aggregating (integration of external data via feeds)
Version control of files
Reflecting, testing, verifying and planning
Guidelines for reflection
Guidelines for competences
Guidelines for evaluation (self-assessment, assessment by others)
Guidelines for goals, personal development and career management
Guidelines for feedback (advice, tutoring, mentoring)
Representing and publishing
Access control by users (owner, peers, authority, public)
Adaptation of the display: layout (flexible placing, boilerplates)
Adaptation of the display: colours, fonts, design
Publishing of several portfolios, or alternatively, various views
Administrating, implementing, adapting
Development potential of the provider, company profile
Enabling technologies (programming language, operating system ...)
Authentication and user administration (backed-up interfaces...)
E-Learning-standards
Migration/storage/export
Usability
User interface
Syndicating (choice of feeds for the individual portfolio)
Availability, accessibility
Navigation/initial training/help
External and internal information function
Interchangeable, adaptable user-defined boilerplates
Personal storage, respectively export function

Appendix B: Consent to participate in the research

Dear Student,

You are invited to consider participating in this research study. The study will investigate the effect of using the TaskStream e-portfolio as a learning tool in terms of its influence on student motivation and performance in writing. This form describes the purpose and nature of the study and your rights as a participant. The decision to participate or not is **yours**, and if you decide to participate, please sign and date the last line of this form.

Explanation of the study

The purpose of this study is to investigate the effect of using of an electronic portfolio in an ESL writing course as a tool to support students' adoption of key phases of the writing-process. This is expected to have an impact on the writing process used, the consistency of practice, the motivation to write and on performance. TaskStream has a resources section that includes advice on planning, drafting and revising strategies, as well as examples and links to useful websites that students can use while preparing their work. TaskStream also has a peer-reviewing feature to enable each group of students to share ideas, discuss each other's drafts and give instant feedback and advice from wherever is convenient. TaskStream allows students to publish their writing online or on the program server. This allows them, if they wish, to invite comments on their work from other people. TaskStream allows students to see how well they are doing, and view their progress from week to week. I am asking for your participation in the following areas:

a) Use the programme to submit your writing assignments and receive marks and feedback from the teacher.
b) Use the peer reviewing feature to work in small groups whose members help each other with assignments, and use the resources section to help in producing work.
c) Complete two questionnaires: one in the first week of the course and one in the last week.

d) Six students will be invited to take part in interviews at the end of the course.

Confidentiality

All of the information collected will be confidential and will only be used for the purposes of the research. This means that your identity will be kept anonymous. In other words, no one besides the researcher will know your name. Whenever data from this study are published, your name will not be used. The data will be stored on a computer, and only the researcher will have access to it.

Your participation

Participation in this study is strictly **voluntary**. This means that you do not have to be a part of the study. Your decision to participate will in no way affect your grade in any class, and you will continue to participate in the same activities. If at any point you change your mind, and no longer want to participate, you can tell your teacher. You will not be paid for participating in this study. If you have any questions about the research, you can contact the researcher by email at ali.alshahrani@ncl.ac.uk.

Student's consent

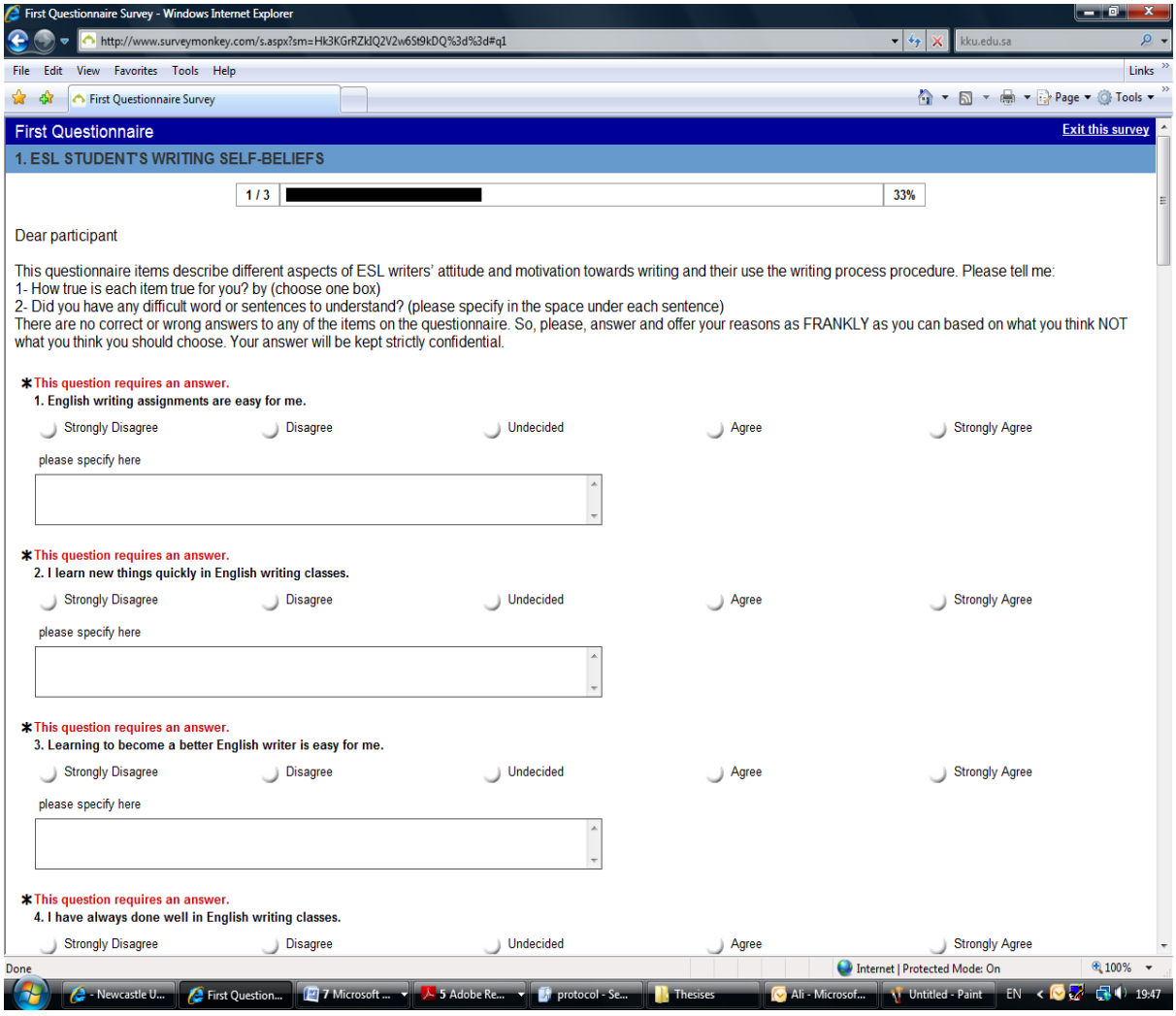
I have read the information provided in this Informed Consent Form. All my questions were answered to my satisfaction. I **voluntarily** agree to participate in this study.

Your signature

_____Date_____

Thank you for your help

Appendix C: Pilot study questionnaire



Appendix D: Main study questionnaire

Dear participant,

These questionnaire items describe different aspects of ESL writers' attitudes and motivation with regard to writing and their use of the writing process. Please tell me how true each item is for you. There are no correct or wrong answers to any of the items on the questionnaire. So, please, answer and offer your reasons as **FRANKLY** as you can, based on what you think, **NOT** what you think you should choose. Rate the following questions as they relate to you at this time. The rating scale goes from 1 to 5 with the following anchors:

1 = Strongly Disagree
2 = Somewhat Disagree
3 = Unsure
4 = Somewhat Agree
5 = Strongly Agree
Your answers will be kept strictly confidential.

Writing self-concept					
English writing assignments are easy for me.	**1**	**2**	**3**	**4**	**5**
I learn new things quickly in English writing classes.	**1**	**2**	**3**	**4**	**5**
Learning to become a better English writer is easy for me.	**1**	**2**	**3**	**4**	**5**
I have always done well in English writing classes.	**1**	**2**	**3**	**4**	**5**
I get good marks in English writing assignments.	**1**	**2**	**3**	**4**	**5**

I am satisfied with how well I do in English writing classes.	**1**	**2**	**3**	**4**	**5**
Compared to others, I am good at English writing.	**1**	**2**	**3**	**4**	**5**
Overall, I am a good English writer.	**1**	**2**	**3**	**4**	**5**
Perceived value of writing					
Learning how to write in English is important for me.	**1**	**2**	**3**	**4**	**5**
Learning about different writing techniques is important for me.	**1**	**2**	**3**	**4**	**5**
Learning about different writing styles is important for me.	**1**	**2**	**3**	**4**	**5**
Writing in English is interesting	**1**	**2**	**3**	**4**	**5**
I like to do writing activities in English.	**1**	**2**	**3**	**4**	**5**
I look forward to writing classes	**1**	**2**	**3**	**4**	**5**
Writing Anxiety					
I usually do my best to avoid situations in which I have to write essays.	**1**	**2**	**3**	**4**	**5**
I only use English to write if I have to.	**1**	**2**	**3**	**4**	**5**
I would do my best to excuse myself if asked to write English essays.	**1**	**2**	**3**	**4**	**5**
I am afraid of writing essays in English when I know they will be evaluated.	**1**	**2**	**3**	**4**	**5**
I feel worried and nervous about my essays getting very poor grades.	**1**	**2**	**3**	**4**	**5**
I worry that my English essays are a lot worse than those of most others.	**1**	**2**	**3**	**4**	**5**
My mind goes blank and I am unable to think clearly when writing English essays.	**1**	**2**	**3**	**4**	**5**
I get nervous when I start writing so I can't concentrate.	**1**	**2**	**3**	**4**	**5**

I usually feel my is body rigid and tense when writing English essays.	**1**	**2**	**3**	**4**	**5**
I get a sinking feeling when I think of trying to complete a difficult writing assignment.	**1**	**2**	**3**	**4**	**5**
I am afraid of my English composition being chosen as a sample for discussion in class.	**1**	**2**	**3**	**4**	**5**
I am afraid that the other students might make fun of my English essay if I ask them to review it.	**1**	**2**	**3**	**4**	**5**
Writing self-efficacy					
I write in English with an underlying logical organization.	**1**	**2**	**3**	**4**	**5**
I write with a clear sense of the reader (the writing flows so smoothly, the reader hardly thinks about it).	**1**	**2**	**3**	**4**	**5**
I accurately and effectively use transitions when writing in English.	**1**	**2**	**3**	**4**	**5**
I include appropriate introductions and conclusions when writing in English.	**1**	**2**	**3**	**4**	**5**
I write essays that are relevant and appropriate to the assignment.	**1**	**2**	**3**	**4**	**5**
I present my points of view or arguments accurately and effectively.	**1**	**2**	**3**	**4**	**5**
I write in several paragraphs with significant detail.	**1**	**2**	**3**	**4**	**5**
I use a wide range of academic and general vocabulary in my writing.	**1**	**2**	**3**	**4**	**5**
I write varying sentence lengths, and use a range of patterns in my writing.	**1**	**2**	**3**	**4**	**5**
I write in English in a way that does not look like a literal translation from my native language.	**1**	**2**	**3**	**4**	**5**
I write with a variety of grammatical structures.	**1**	**2**	**3**	**4**	**5**
I use conjunctions accurately in my writing	**1**	**2**	**3**	**4**	**5**

I use punctuation accurately in my writing	**1**	**2**	**3**	**4**	**5**
I use correct subject-verb agreement in my writing.	**1**	**2**	**3**	**4**	**5**
I use correct spellings when writing my essays.	**1**	**2**	**3**	**4**	**5**
Writing process self-consistency					
I carefully read and identify the requirements of the assignment before I write.	**1**	**2**	**3**	**4**	**5**
I write down goals for every writing task I need to accomplish.	**1**	**2**	**3**	**4**	**5**
I make a schedule (table) of the guidelines for my writing task (resources, reading audiences, length, etc.).	**1**	**2**	**3**	**4**	**5**
I make a timetable for the writing process before I start writing.	**1**	**2**	**3**	**4**	**5**
I look at a model from a native speaker or more proficient writer before I write.	**1**	**2**	**3**	**4**	**5**
I brainstorm to generate ideas before I write.	**1**	**2**	**3**	**4**	**5**
I note down key words and short notes related to the topic before I start writing.	**1**	**2**	**3**	**4**	**5**
I visualize what I want to write about, and have a plan in my mind, but not on paper.	**1**	**2**	**3**	**4**	**5**
I write down an outline of my assignment on paper.	**1**	**2**	**3**	**4**	**5**
I stop after a few sentences or a whole paragraph, covering one idea.	**1**	**2**	**3**	**4**	**5**
I reread what I have written to get ideas about how to continue.	**1**	**2**	**3**	**4**	**5**
I check my outline while writing, and make necessary changes to it.	**1**	**2**	**3**	**4**	**5**
I write bits of the text in my native language and then translate them into English.	**1**	**2**	**3**	**4**	**5**
I simplify what I want to write if I don't know how	**1**	**2**	**3**	**4**	**5**

to express my thoughts in English.					
If I don't know a word in English, I stop writing and look up the word in the dictionary.	**1**	**2**	**3**	**4**	**5**
I leave the text aside for a couple of days and then I review it to see it from a new viewpoint.	**1**	**2**	**3**	**4**	**5**
I read my text aloud to check if the meaning is clear.	**1**	**2**	**3**	**4**	**5**
When revising my paper, I use my checklist to check if my essay matches the assignment requirements.	**1**	**2**	**3**	**4**	**5**
I show my text to some of my classmates and ask for their comments.	**1**	**2**	**3**	**4**	**5**
I compare my text with essays written by my classmates on the same topic.	**1**	**2**	**3**	**4**	**5**
I check my teacher's feedback comments and try to learn from them.	**1**	**2**	**3**	**4**	**5**
I trust the feedback suggestions my peer reviewers give me.	**1**	**2**	**3**	**4**	**5**
I focus on one thing at a time when revising (e.g. content, structure).	**1**	**2**	**3**	**4**	**5**
I make changes in vocabulary when revising my paper.	**1**	**2**	**3**	**4**	**5**
I make changes in sentence structure and length when revising my paper.	**1**	**2**	**3**	**4**	**5**
I make changes in the structure of the essay when revising my paper.	**1**	**2**	**3**	**4**	**5**
I make changes in the content or ideas when revising my paper.	**1**	**2**	**3**	**4**	**5**

Appendix E: Holistic scoring rubric

Score of 5: An essay at this level largely accomplishes all of the following:

- Effectively addresses the topic and task
- Is well organized and well developed, using clearly appropriate explanation, exemplification, and/or details
- Displays unity, progression, and coherence
- Displays consistent facility in the use of language, demonstrating syntactic variety, appropriate word choice, and idiomaticity, though it may have minor lexical or grammatical errors

Score of 4: An essay at this level largely accomplishes all of the following:

- Addresses the topic and task well though some points many not be fully elaborated
- Is generally well organized and well developed, using appropriate and sufficient explanation, exemplification, and/or details
- Displays unity, progression, and coherence, though it may contain occasional redundancy, digression, or unclear connection
- Displays facility in the use of language, demonstrating syntactic variety and range of vocabulary, though it will probably have occasional noticeable minor errors in structure or word form or idiomatic language use that do not interfere with meaning

Score of 3: An essay at this level largely accomplishes all of the following:

- Addresses the writing topic and task using somewhat developed explanation, exemplification, and/or details
- Displays unity, progression, and coherence, though connection of ideas may be occasionally obscured
- May demonstrate inconsistent facility in sentence formation and word choice that may result in lack of clarity and occasionally obscure meaning
- May display accurate but limited range of syntactic structures and vocabulary

Score of 2: An essay at this level largely accomplishes all of the following:

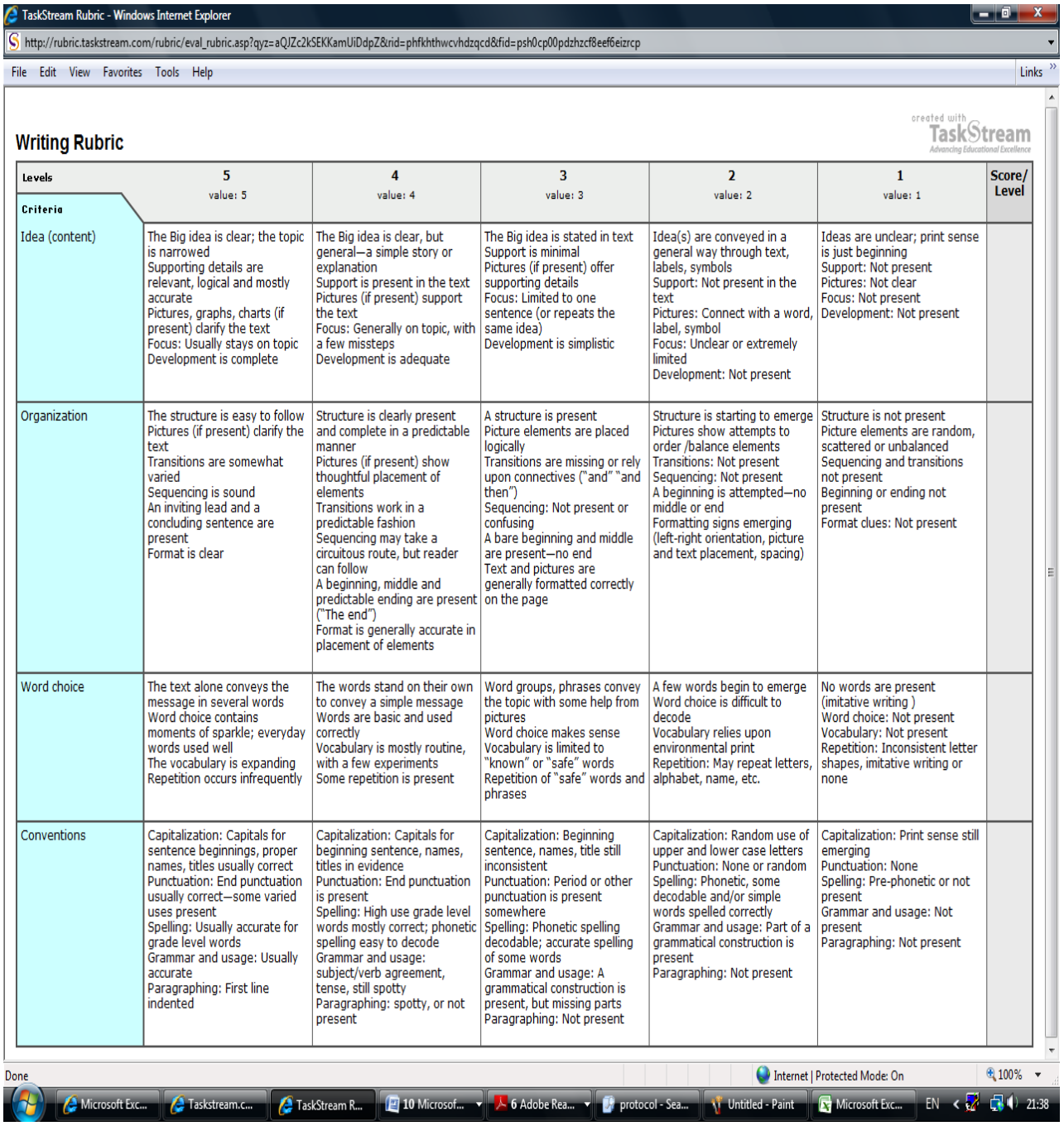
- Limited development in response to the topic and task
- Inadequate organization or connection of ideas

- Inappropriate or insufficient exemplification, explanations, or details to support or illustrate generalizations in response to the task
- A noticeably inappropriate choice of words or word forms
- An accumulation of errors in sentence structure and/or usage

Score of 1: An essay at this level largely accomplishes all of the following:

- Serious disorganization or underdevelopment
- Little or no detail, or irrelevant specifics, or questionable responsiveness to the task
- Serious and frequent errors in sentence structure or usage

Appendix F: Analytical scoring rubric



Levels / Criteria	5 value: 5	4 value: 4	3 value: 3	2 value: 2	1 value: 1	Score/ Level
Idea (content)	The Big idea is clear; the topic is narrowed Supporting details are relevant, logical and mostly accurate Pictures, graphs, charts (if present) clarify the text Focus: Usually stays on topic Development is complete	The Big idea is clear, but general—a simple story or explanation Support is present in the text Pictures (if present) support the text Focus: Generally on topic, with a few missteps Development is adequate	The Big idea is stated in text Support is minimal Pictures (if present) offer supporting details Focus: Limited to one sentence (or repeats the same idea) Development is simplistic	Idea(s) are conveyed in a general way through text, labels, symbols Support: Not present in the text Pictures: Connect with a word, label, symbol Focus: Unclear or extremely limited Development: Not present	Ideas are unclear; print sense is just beginning Support: Not present Pictures: Not clear Focus: Not present Development: Not present	
Organization	The structure is easy to follow Pictures (if present) clarify the text Transitions are somewhat varied Sequencing is sound An inviting lead and a concluding sentence are present Format is clear	Structure is clearly present and complete in a predictable manner Pictures (if present) show thoughtful placement of elements Transitions work in a predictable fashion Sequencing may take a circuitous route, but reader can follow A beginning, middle and predictable ending are present ("The end") Format is generally accurate in placement of elements	A structure is present Picture elements are placed logically Transitions are missing or rely upon connectives ("and" "and then") Sequencing: Not present or confusing A bare beginning and middle are present—no end Text and pictures are generally formatted correctly on the page	Structure is starting to emerge Pictures show attempts to order /balance elements Transitions: Not present Sequencing: Not present A beginning is attempted—no middle or end Formatting signs emerging (left-right orientation, picture and text placement, spacing)	Structure is not present Picture elements are random, scattered or unbalanced Sequencing and transitions not present Beginning or ending not present Format clues: Not present	
Word choice	The text alone conveys the message in several words Word choice contains moments of sparkle; everyday words used well The vocabulary is expanding Repetition occurs infrequently	The words stand on their own to convey a simple message Words are basic and used correctly Vocabulary is mostly routine, with a few experiments Some repetition is present	Word groups, phrases convey the topic with some help from pictures Word choice makes sense Vocabulary is limited to "known" or "safe" words Repetition of "safe" words and phrases	A few words begin to emerge Word choice is difficult to decode Vocabulary relies upon environmental print Repetition: May repeat letters, alphabet, name, etc.	No words are present (imitative writing) Word choice: Not present Vocabulary: Not present Repetition: Inconsistent letter shapes, imitative writing or none	
Conventions	Capitalization: Capitals for sentence beginnings, proper names, titles usually correct Punctuation: End punctuation usually correct—some varied uses present Spelling: Usually accurate for grade level words Grammar and usage: Usually accurate Paragraphing: First line indented	Capitalization: Capitals for beginning sentence, names, titles in evidence Punctuation: End punctuation is present Spelling: High use grade level words mostly correct; phonetic spelling easy to decode Grammar and usage: subject/verb agreement, tense, still spotty Paragraphing: spotty, or not present	Capitalization: Beginning sentence, names, title still inconsistent Punctuation: Period or other punctuation is present somewhere Spelling: Phonetic spelling decodable; accurate spelling of some words Grammar and usage: A grammatical construction is present, but missing parts Paragraphing: Not present	Capitalization: Random use of upper and lower case letters Punctuation: None or random Spelling: Phonetic, some decodable and/or simple words spelled correctly Grammar and usage: Part of a grammatical construction is present Paragraphing: Not present	Capitalization: Print sense still emerging Punctuation: None Spelling: Pre-phonetic or not present Grammar and usage: Not present Paragraphing: Not present	

Appendix G: Semi-structured interview protocol

I. Introduction	First of all, thank you for taking the time to meet me today. My name is Ali Alshahrani and I would like to talk to you about your experiences in using the TaskStream e-portfolio to perform your writing course tasks. The interview should take about 30 minutes. With your permission, I will be recording the session because I don't want to miss any of your comments, and I will also be taking some notes during the session. Please be sure to speak up so that none of your comments are missed. All responses will be kept confidential. This means that your interview responses that I include in my study will not identify you as the respondent. **Remember**, you don't have to talk about anything you don't want to, and you may end the interview at any time. Are there any questions about what I have just explained? Are you willing to participate in this interview? **Interviewee** _____ **Date**_____

II.	**Questions**	**Warm up**	How long have you been at Newcastle? What is your major? Why did you decide on that major? What do you plan to do when you get your degree? What kind of English classes have you taken? How many English writing classes do you have to take?
		Focus	**P 5:** I divided my time into three parts. Week one was for collecting information and planning my ideas; week two, for writing the essay and week three for revising my essay and writing the first draft to submit to the website. **I:** Could you explain and give more details? **P 5:** After the teacher posted the assignment (the project, 1000 words), I read the task requirements and wrote down the topic and what kind of writing pattern I would use then I started collecting information and material from the internet and the library. **I:** What was your project about? **P 5:** I wrote about which is better - single sex schools or mixed sex schools in the UK. **I:** So how did you work on that project? **P 5:** I decided to make a comparison between the two systems and then give my opinion supported by evidence. **I:** Please continue **P 5:** I spent a week collecting information from the internet and the library
		Ending the interview	

		Then I used the outline format in the resources section to add my topic sentence and ideas. I wrote a short sentence for each paragraph and the important words. I decided to write two paragraphs about mixed sex schools and three paragraphs about mixed sex schools, plus the introduction and the conclusion. I read some comparison examples from the resources section and on the internet before starting to write.
III.	**Closing**	**I:** Is there anything else you would like to tell me? I will analyse the information you and your colleagues have provided and include it in the results chapters of my thesis in two months time. I will be send you a copy to look at and approve. Thank you for your time.

Appendix H: Benefits of using Taskstream

a) For Students:

1. Taskstream has a resource section that includes advice on planning, drafting and revising strategies as well as examples and links to useful websites which students can use while preparing their writing tasks.
2. Taskstream has a peer reviewing feature which enables each group of students to share ideas, discuss each other's drafts, and give instant feedback and advice from wherever is convenient.
3. Taskstream allows students to publish their writing online or on the programme. This allows them, if they wish, to invite comments from others on their work.
4. Taskstream allows students to see how well s/he is doing and the progress s/he is making from week to week.

b) For Teachers:

1. Teachers can create a bank of feedback comments which they can re-use with other students and other student cohorts.
2. They can retain copies of students' work online, making it easier to compare work at different stages during the term, and check students' progress
3. Teachers can find out how much use their students are making of the different resource materials, and cross-check that with information about their progress to help identify resources that might help individual students to tackle their problems.

c) For programme administrators:

Programmes administrators can easily generate reports on the performance of each student, on the course as a whole, and on the programme in few seconds. This information will help them identify ways of helping individual students, either by suggesting they transfer to another level, or by identifying the need to set up a remedial course.

Student and teacher roles in TaskStream.

a). Student roles

1. Students will use the programme to submit their writing assignments and receive their marks and feedback from their teachers.
2. They can use the peer reviewing feature to work in small groups to help each other in their assignments, and can use the resources section to help in producing their work.
3. They will be asked to complete two questionnaires: one in the first week of the course and one in the last week.
4. Six students will be invited to take part an interview at the end of the course.

B). Teacher roles

1. Post the assignment task on the programme and set a deadline for receiving the assignments.
2. Mark the students' work and give feedback to the students online.
3. Encourage students to use the various resources on the website.

Appendix I: Pre-intervention Mann-Whitney U test findings for learners' writing self-beliefs

Test Statistics[a]

	Per_perceived_value	Pre-Writing Interest	Pre-Writing Importance
Mann-Whitney U	229.500	224.000	229.500
Wilcoxon W	482.500	477.000	482.500
Z	-.037	-.188	-.039
Asymp. Sig. (2-tailed)	.970	.851	.969

a. Grouping Variable: Group

Test Statistics[a]

	Pre-Self Concept	Pre-Ease of Writing	Pre –Writing Satisfaction
Mann-Whitney U	208.000	196.500	197.000
Wilcoxon W	439.000	427.500	428.000
Z	-.562	-.884	-.904
Asymp. Sig. (2-tailed)	.574	.377	.366

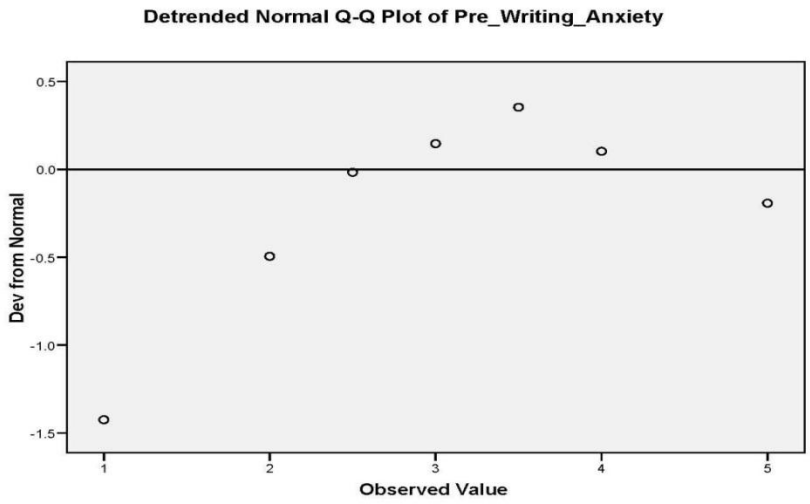
a. Grouping Variable: Group

Test Statistics[a]

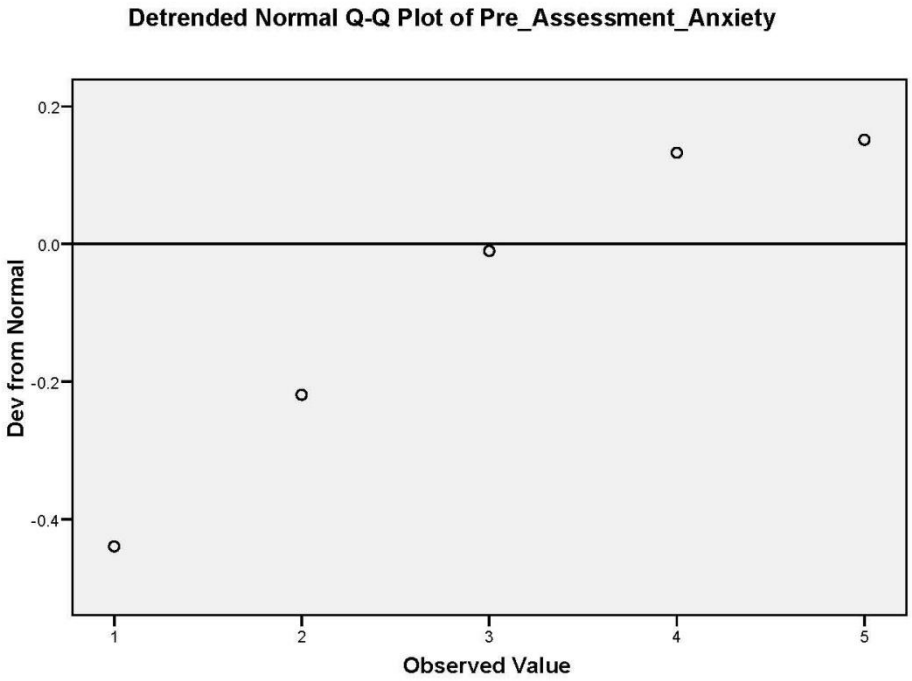
	Pre-Writing Avoidance	Pre-Writing Anxiety	Pre-Anxiety To Write	Pre-Feedback Anxiety	Pre-Assessment Anxiety
Mann-Whitney U	192.500	221.500	200.500	179.500	193.500
Wilcoxon W	445.500	474.500	453.500	410.500	424.500
Z	-.997	-.263	-.764	-1.281	-.961
Asymp. Sig. (2-tailed)	.319	.793	.445	.200	.337

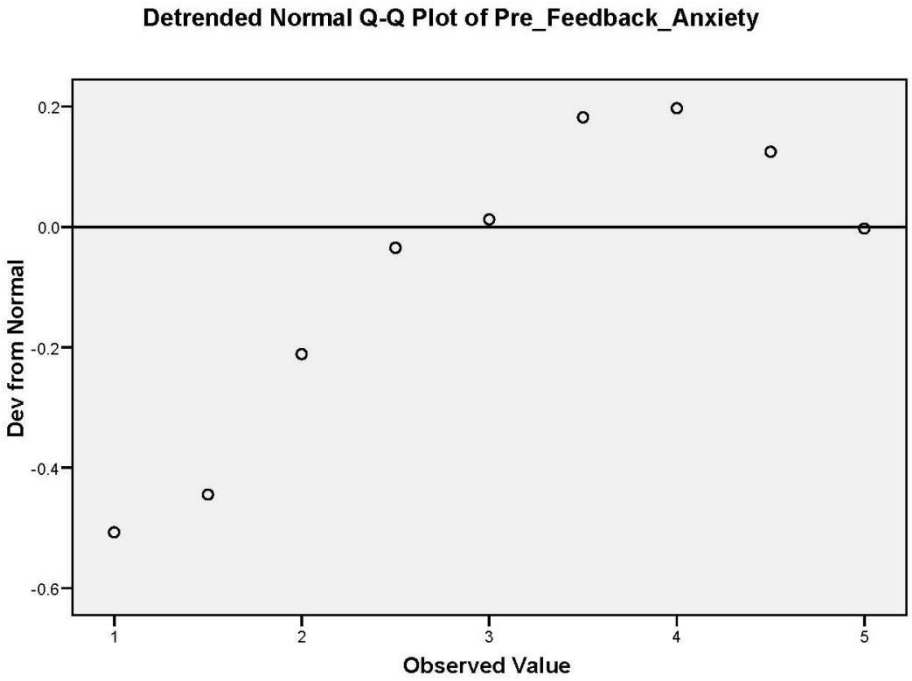
a. Grouping Variable: Group

Appendix J: Normal Q-Q Plot for pre-intervention questionnaire regarding learners' writing self-beliefs

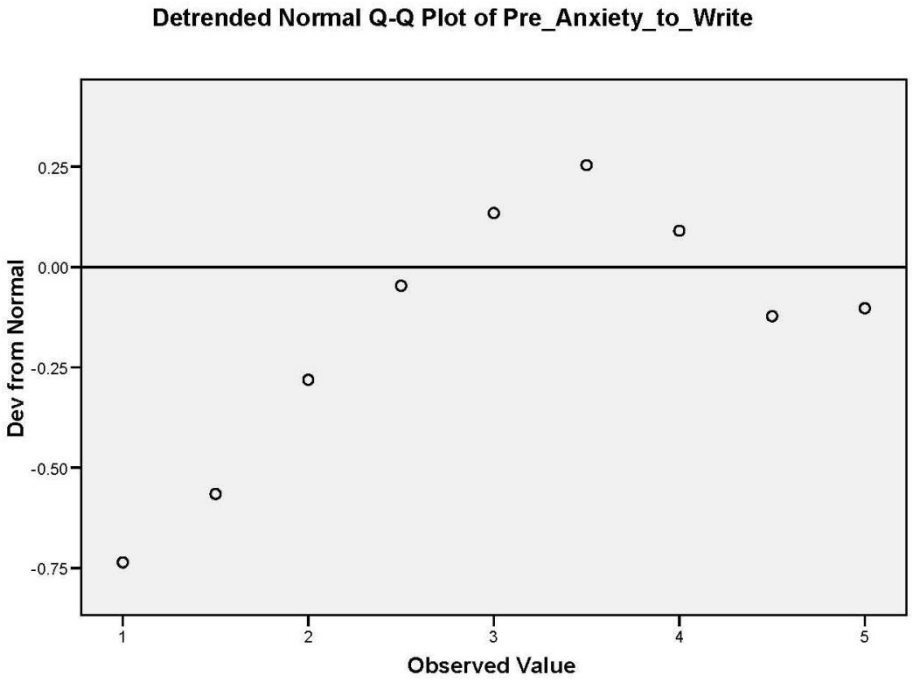


Pre_Assessment_Anxiety

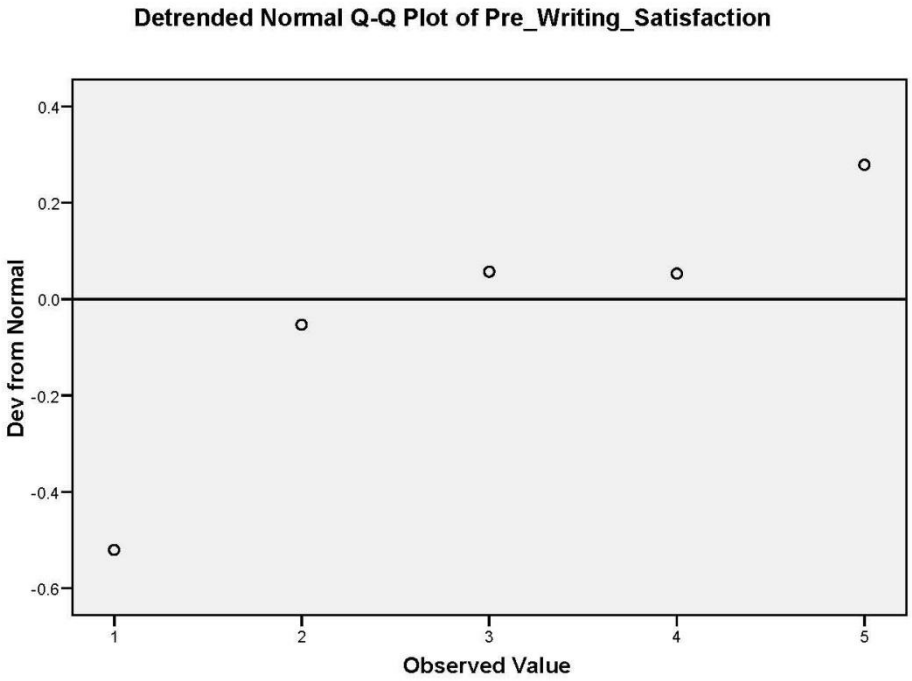

Detrended Normal Q-Q Plot of Pre_Assessment_Anxiety
Dev from Normal
0.2
0.0
-0.2
-0.4
1
2
3
4
5
Observed Value



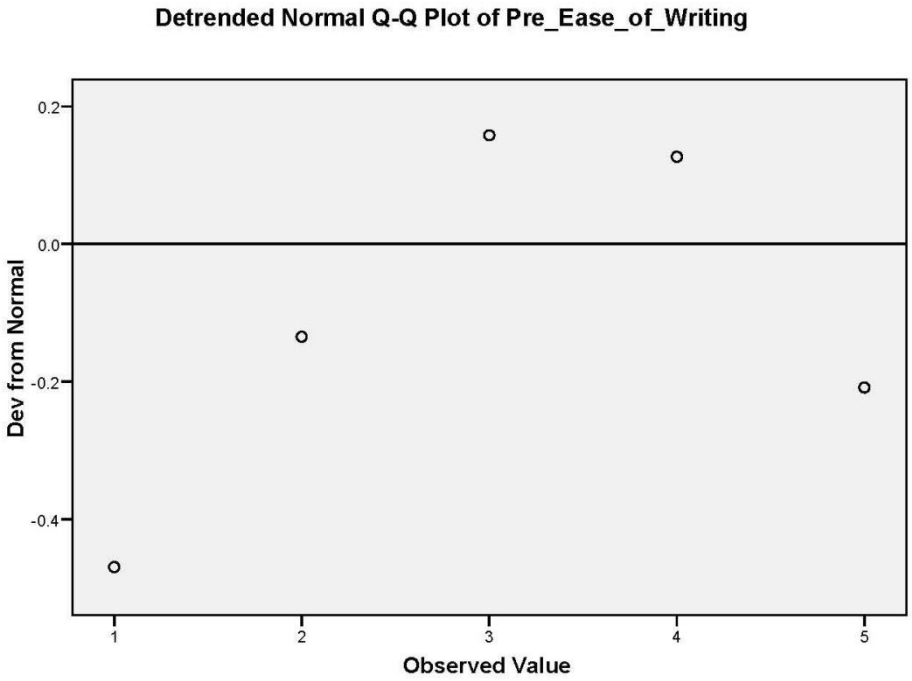
Pre_Writing_Anxiety



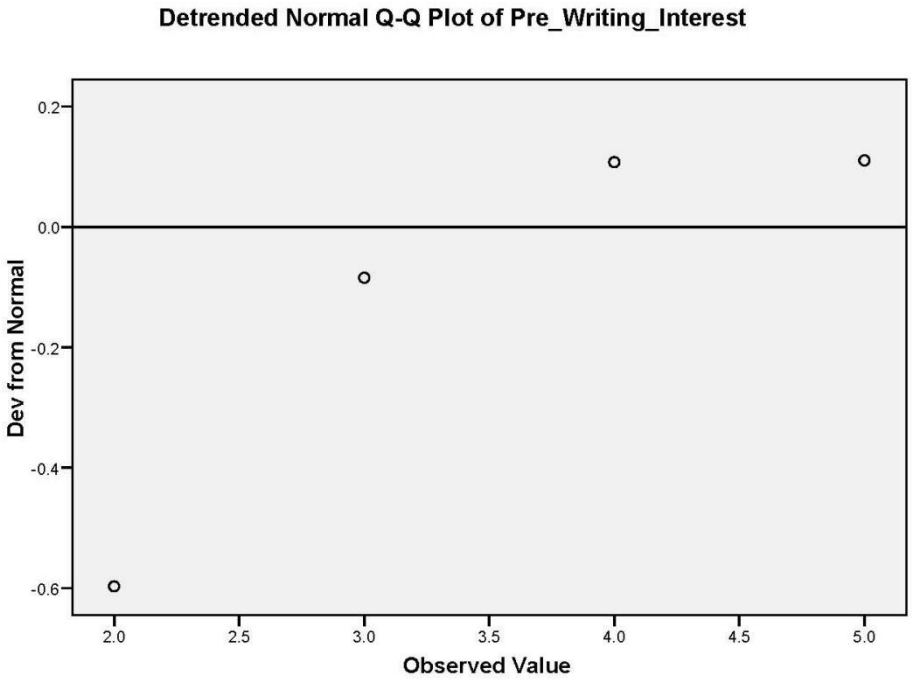
Pre_Feedback_Anxiety



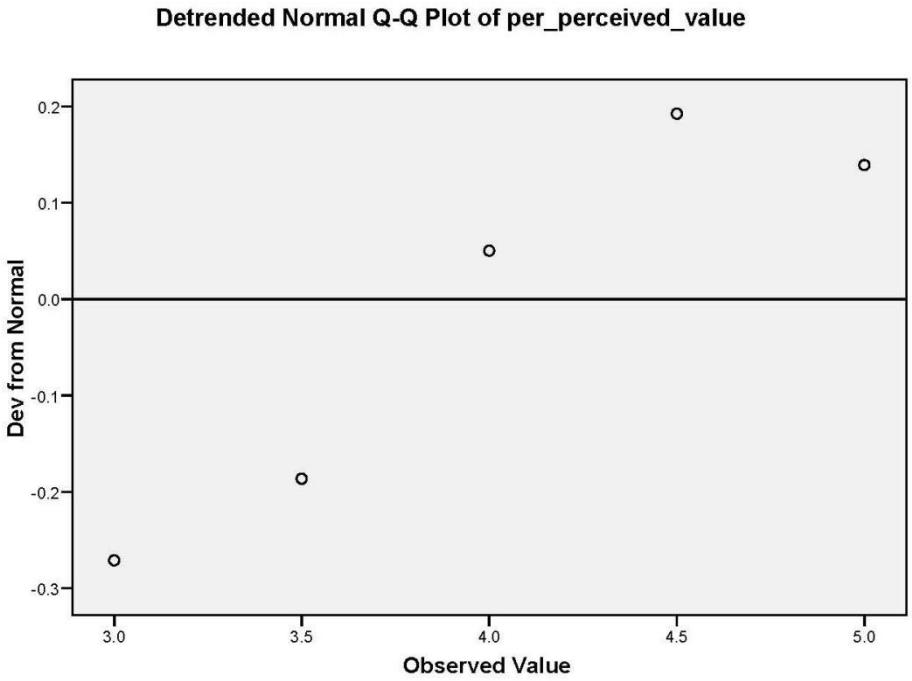
Pre_Anxiety_to_Write



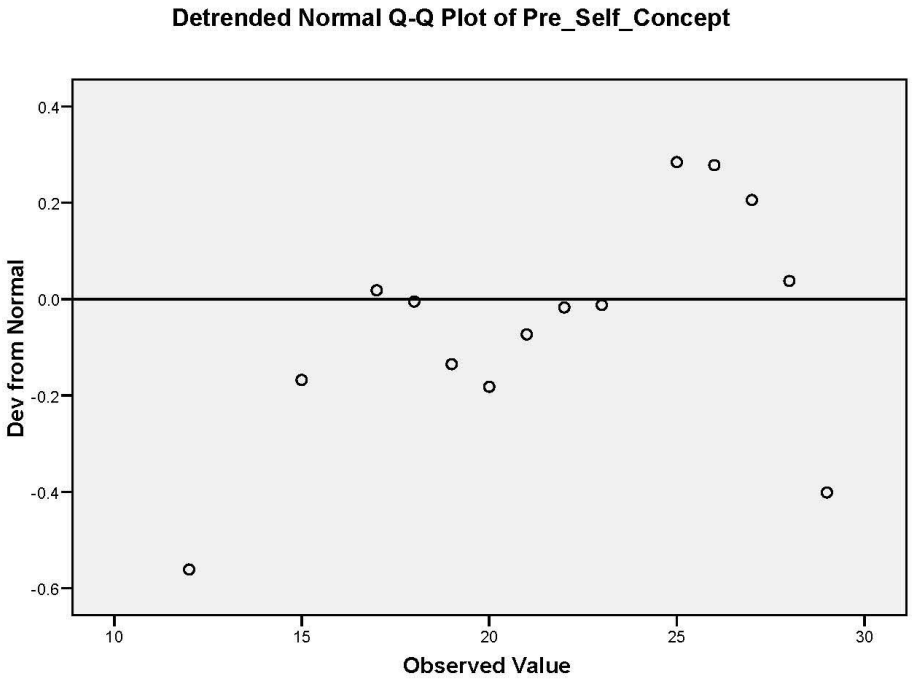
Pre_Writing_Satisfaction



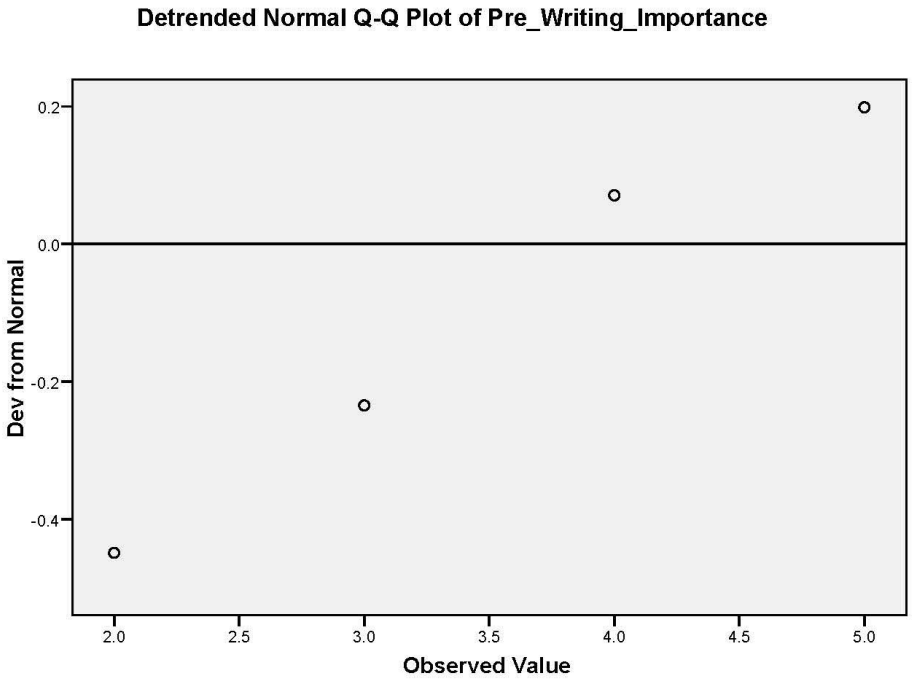
Pre_Writing_Importance



Pre_Writing_Interest

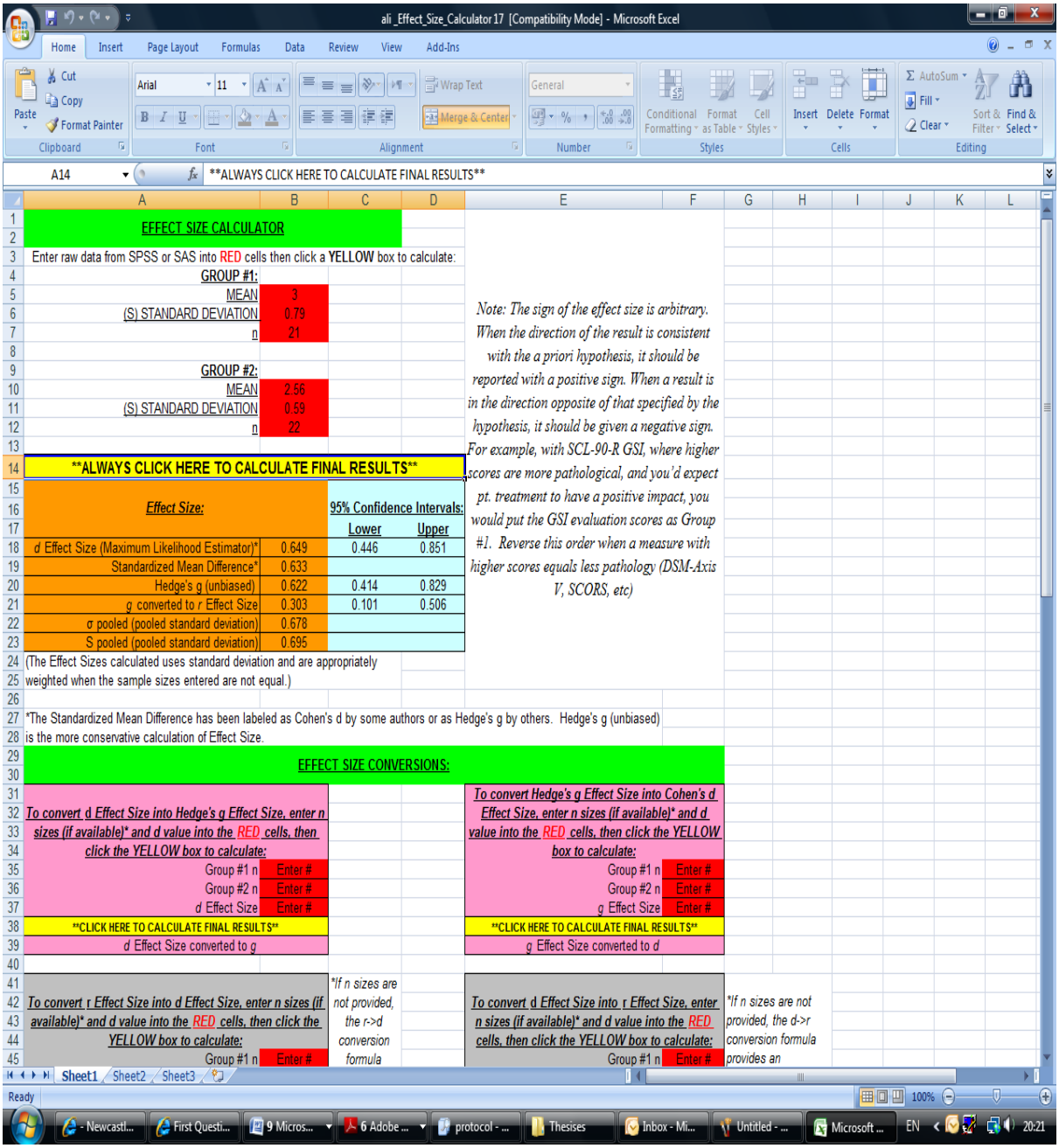


Pre_Ease_of_Writing



Pre_Self_Concept

Appendix K: Effect size calculator



ali _Effect_Size_Calculator 17 [Compatibility Mode] - Microsoft Excel

EFFECT SIZE CALCULATOR

Enter raw data from SPSS or SAS into RED cells then click a **YELLOW** box to calculate:

GROUP #1:	
MEAN	3
(S) STANDARD DEVIATION	0.79
n	21
GROUP #2:	
MEAN	2.56
(S) STANDARD DEVIATION	0.59
n	22

****ALWAYS CLICK HERE TO CALCULATE FINAL RESULTS****

Effect Size:		95% Confidence Intervals:	
		Lower	Upper
d Effect Size (Maximum Likelihood Estimator)*	0.649	0.446	0.851
Standardized Mean Difference*	0.633		
Hedge's g (unbiased)	0.622	0.414	0.829
g converted to *r* Effect Size	0.303	0.101	0.506
σ pooled (pooled standard deviation)	0.678		
S pooled (pooled standard deviation)	0.695		

(The Effect Sizes calculated uses standard deviation and are appropriately weighted when the sample sizes entered are not equal.)

Note: The sign of the effect size is arbitrary. When the direction of the result is consistent with the a priori hypothesis, it should be reported with a positive sign. When a result is in the direction opposite of that specified by the hypothesis, it should be given a negative sign. For example, with SCL-90-R GSI, where higher scores are more pathological, and you'd expect pt. treatment to have a positive impact, you would put the GSI evaluation scores as Group #1. Reverse this order when a measure with higher scores equals less pathology (DSM-Axis V, SCORS, etc)

*The Standardized Mean Difference has been labeled as Cohen's d by some authors or as Hedge's g by others. Hedge's g (unbiased) is the more conservative calculation of Effect Size.

EFFECT SIZE CONVERSIONS:

To convert d Effect Size into Hedge's g Effect Size, enter n sizes (if available) and d value into the RED cells, then click the YELLOW box to calculate:*

Group #1 n	Enter #
Group #2 n	Enter #
d Effect Size	Enter #

****CLICK HERE TO CALCULATE FINAL RESULTS****

d Effect Size converted to *g*

To convert Hedge's g Effect Size into Cohen's d Effect Size, enter n sizes (if available) and d value into the RED cells, then click the YELLOW box to calculate:*

Group #1 n	Enter #
Group #2 n	Enter #
g Effect Size	Enter #

****CLICK HERE TO CALCULATE FINAL RESULTS****

g Effect Size converted to *d*

To convert r Effect Size into d Effect Size, enter n sizes (if available) and d value into the RED cells, then click the YELLOW box to calculate:*

Group #1 n Enter #

**If n sizes are not provided, the r->d conversion formula*

To convert d Effect Size into r Effect Size, enter n sizes (if available) and d value into the RED cells, then click the YELLOW box to calculate:*

Group #1 n Enter #

**If n sizes are not provided, the d->r conversion formula provides an*