THE EFFECTIVENESS OF BLENDED COURSE INSTRUCTION IN SECOND LANGUAGE LEARNING

FINAL REPORT
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Researchers:
Joanne Ellis
Marleigh Greaney
Judy Macdonald

Research Assistant:
Jennifer Smith

Collaborators:
Ron Curtis
Patti Kingsmill
Fran Davis

Cégep Vanier College

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Table of Contents

List of Tables

List of Figures

List of Appendices

Summary

Key Words:

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The number of second language students registering in Québec's cégeps continues to increase. These students enter cégep with weak language skills. This project investigated how, why and to what extent blended courses are effective in improving student perseverance, performance, and motivation in the teaching of English as a Second Language. The specific objectives of this project were to determine whether blended courses developed with limited resources and minimal technical skills improve student outcomes in second language classrooms where the focus is on reading and writing skills. The primary focus, therefore, was to measure the relative effectiveness of four instructional settings: face-to-face / traditional pedagogical approach (Setting I); face-to-face, socio-constructive approach (Setting II); blended, traditional pedagogical approach (Setting III); and blended, socio-constructive approach (Setting IV). Blended courses combined face-to-face meetings with online learning activities, while courses adhering to a socio-constructive pedagogical approach included activities that allowed learners to actively construct knowledge. 165 students participated in the study and were drawn from the Academic Writing Skills and Effective Reading and Writing Skills courses offered at Vanier College.

This research made use of both quantitative and qualitative methods. Impacts of instructional setting on student achievement and motivation were primarily examined with analyses of variance, while student knowledge of the essay-writing process was examined through content analysis of student writing and student responses to a series of open-ended questions. Overall, achievement and persistence were generally greatest among students in the blended/socio-constructivist setting. Furthermore, while these students experienced the greatest increase in pressure related to the course, they also came to value writing more highly than students in other settings and became more confident in their abilities overall. Students in the blended/socio-constructivist setting also demonstrated the greatest improvements in "deep learning". They showed great improvements in their understanding of essay structure and of the importance of arguments and clarity. These "deep learning" improvements were deemed to be of a higher value than the more common "surface learning" improvements in grammar and vocabulary seen in all of the settings. The study reveals that the extra demands of deep thinking inherent in blended learning with a socio-constructivist approach don't always feel good. Students need to be helped to understand and integrate such experiences and ultimately feel good about them. The project concludes with recommendations for educators interested in adding a blended component to their traditional, face-to-face courses.

Résumé

Le nombre d'élèves allophones inscrits dans les cégeps est à la hausse. Ces élèves entrent au cégep avec des faiblesses linguistiques. Ce projet évalue l'efficacité de cours interactifs en langue seconde, surtout pour les volets lecture et rédaction. Cette étude a comme objectif de mesurer l'efficacité de quatre types d'apprentissage: face-à-face / magistral; face-à-face / socioconstructiviste; interactif / magistral; et interactif / socioconstructiviste. Les cours interactifs consistent en rencontres avec l'enseignant et en activités d'apprentissage en ligne sur Internet. L'approche socioconstructiviste mise plutôt sur la construction des connaissances que sur l'apprentissage passif. Comme les enseignants au collégial n'ont pas accès à des sommes d'argent substantielles, ce projet met donc l'accent sur les cours interactifs qui ont été conçus avec des ressources limitées et le minimum d'habiletés techniques possible. Les participants de la recherche proviennent des cours de mise-à-niveau offerts à Vanier (*Academic Writing Skills* et *Effective Reading and Writing*).

Une évaluation quantitative et qualitative permet d'examiner les perceptions et attitudes des élèves face aux cours interactifs, ainsi que leurs connaissances relatives à la rédaction de textes. En général, les élèves des cours interactifs / socioconstructivistes performent mieux et abandonnent moins souvent le cours. De plus, même si ces élèves subissent une hausse de pression face au cours, ils finissent néanmoins en appréciant davantage la valeur des habiletés en rédaction et avec une plus forte confiance en eux-mêmes. Les élèves des cours interactifs / socioconstructivistes ont également démontré la plus grande amélioration en « apprentissage profonde » (*deep learning*). Cette étude révèle donc la nécessité d'offrir

un soutien aux élèves lorsqu'ils s'inscrivent à un cours interactif pour la première fois; la « réflexion profonde » (*deep* thinking) est exigeante et nous devons amener les élèves à apprécier graduellement sa valeur. La conclusion porte sur des recommandations destinées aux professeurs désirant introduire des éléments interactifs dans leurs cours.

I. Problématique

A. Introduction

The number of second language students registering in Québec's cégeps continues to increase in both the anglophone and francophone sectors. These students enter cégep with weak language skills that jeopardize their success in all courses. This project examines the effectiveness of blended[1] courses in second language learning, with particularly reference to the development of reading and writing skills.

The digital revolution of the last decade has affected all aspects of our lives: personal, professional and academic. Computer technologies are ubiquitous; we live in a knowledge economy where the prime commodity is no longer a 'product' in the traditional sense, but rather a rapidly expanding body of knowledge. Success in the current economic climate depends largely on a person's ability to manage and contribute to the explosion of information taking place within our society.

To prepare students for this new reality, educators at all levels are exploring the pedagogical applications of information technologies. Most educational theorists see the computer as a tool that has the potential to bring about real changes in teaching practices (Poellhuber and Boulanger, 2001). As a result, many universities and colleges have joined the digital revolution. In Québec, recent program revisions at the cégep level have taken into account this

[1] Blended courses combine face-to-face classroom meetings with online learning activities.

new reality, and have added proficiency in information technologies to the list of competencies to be acquired by students (Ministère de l'éducation du Québec, 1997). The process of integrating computer technologies into cégep courses is a process of change that involves many steps, and at any point, the educational institution can either encourage or impede this process of innovation (Poellhuber, 2001).

In an effort to encourage the integration of computer technologies, many cégeps have invested in communication systems such as *FirstClass, WebCT* and *DECclic*, which offer functions such as discussion boards, live chat and hosting of teacher web pages. Individual cégeps are constantly upgrading their computer laboratories and networks. For instance, in 1994 the top-of-the-line processor was the 486, and this accounted for 30% of the computers in Québec's cégeps. By 2001, only 3% of the computers in Québec's cégeps had 486 processors, while 40% were running Pentium 4 processors or better (Guay, 2002).

However, despite continued investments, computer technologies are not widely used by teachers as part of their courses. For instance, in 2003, at Vanier College, only 37 of approximately 500 teachers (7.5%) had course materials available on the web. These materials consisted mainly of course notes and readings; very few online activities could be found on these webpages (see www.vaniercollege.qc.ca/main/fclass/fcteachers). Little has changed since 2003.

This low rate of computer integration among teachers is not unique to Vanier College. In an effort to address this same situation, Poellhuber (2001)

worked with teachers at Collège Laflèche to integrate computer technologies into their classes. He hoped that through the experience of developing and/or selecting appropriate technologies for their courses, teachers would become more open to reflecting upon their approaches to teaching, and then gradually embark on a process of pedagogical renewal. However, Poellhuber found that the integration of computer technologies into courses did not necessarily imply changes in the pedagogical approaches of the instructors. Many teachers in his study claimed at the outset to subscribe to the traditional "chalk and talk" approach to teaching. They found ways to incorporate technologies into their courses, but they did so in ways that only continued to support their traditional teaching practices. Thus, the act of integrating technology alone did little to change their basic epistemological beliefs. They continued to regard knowledge as a given set of facts or skills that they wanted to impart to their students through notes, be they on the blackboard, on a PowerPoint projector, or on the web.

Likewise, throughout the réseau, a number of teachers have succeeded in appropriating new technologies to the extent that they substitute the web for the blackboard, or email for the telephone. However, relatively few have harnessed the power of computer technologies to develop new activities that would complement their current repertoire. Nonetheless, anecdotal evidence suggests that a growing number of teachers are eager to exploit the advantages of online learning more fully, but are unsure as to how to proceed. Many are beginning to recognize that "by taking advantage of the pedagogical strengths of on-campus

and online teaching, instructors can offer students the greatest chance to discover their strengths and weaknesses as learners" (Chamberlin, 2001). Teachers are becoming more and more aware of the potential of computer technologies to facilitate student learning. But as the statistics cited earlier indicate, it is not the availability of appropriate software and hardware that is limiting the integration of computer technologies into teaching practices. Rather, anecdotal evidence suggests that many teachers continue to perceive their lack of **technical ability** and **limited resources** as major obstacles in integrating these technologies into their practices. Furthermore, their **epistemological beliefs** have a strong influence on whether they will adopt new technologies. Teachers need guidance and ongoing support in moving beyond the walls of their traditional classrooms, into the uncertain realm of **blended pedagogy**.

With ongoing pedagogical support, we believe that all educators can develop relevant and challenging activities for their students, and gradually transform their traditional, **face-to-face** (F2F) courses into **blended** courses that have both face-to-face and online components. By participating in a series of workshops, teachers in this project reflected upon their current teaching practices and beliefs, and continued to become more open to the potential of online learning. However, to help teachers ensure the quality of the courses that they developed, we needed to better understand the extent to which these online activities facilitate student learning, and the ways in which they do so.

Few studies have investigated this issue at the cégep level (Association pour la recherche au collégial, 2003; Barrette, 2004b). We note that efforts are being

actively pursued at the primary and secondary levels to integrate computer technologies into the classroom. However, there is still insufficient evidence that the integration of computer technologies leads to improved achievement and motivation among cégep-level students. Barrette (2004a, 2004b, 2004c) produced a meta-synthesis of previous studies examining the effectiveness of information technologies in cégep education. He developed a framework for classifying and comparing different studies. The framework emphasizes the level of integration of computer technologies, the pedagogical design, the impacts of IT on teaching, the impacts of IT on learning, and institutional support for technology. Barrette classified 26 studies according to the variables in his framework, and based on this classification, generated a set of nine hypotheses to be tested in future research. Our project seeks to address several of these by investigating the following research question:

- To what extent are courses that integrate online activities more effective than those that do not?

More specifically, we proposed to investigate, both quantitatively and qualitatively, the **effectiveness**[2] of **blended** courses that are developed with **limited resources**[3] and **minimal technical skills**, and which are used in a context of **second language acquisition (SLA)**. At the same time, we also proposed to investigate the interaction between student characteristics, instructional setting and effectiveness.

[2] We understand **effectiveness** to be represented by measurements that assess variables such as persistence, level of performance, level of motivation

[3] Limited resources include human, financial and temporal resources.

The results obtained should clarify if, and under what conditions, blended courses are effective in improving second language learning. The results of this project will be of special interest and benefit to educators across the réseau. In particular, the results should be of use to language teachers, second language tutors, learning center staff, educational advisers, and specialists in educational technology. In addition, we envision that many of the results from this study will be transferable to other disciplines, and thus be of interest to teachers in a wide range of subject areas. We believe that teachers of the réseau will be encouraged to develop and implement blended courses if the results of studies demonstrate effectiveness.

a. Why Blended Courses?

Our research question takes as a given that we live in a technology-driven world and that students must graduate from cégep as computer literate members of society. Within our college and other colleges of the réseau, some teachers are experimenting with online materials. Recently, we have been informally guiding E.S.L. teachers at Vanier in the development and use of web-based materials that could be integrated into the classroom setting or accessed from outside of the College. Since we believe that classroom instruction is valuable, especially in second language courses, we have been recommending that teachers combine face-to-face (F2F) meetings with web technology, and thus develop **blended** learning environments. More and more, we have been encouraging teachers to base the materials that they develop on pertinent research findings and current learning theories. Observations suggest that

students are enjoying and benefiting from these new materials. One of the goals of this project, therefore, is to determine whether in fact blended courses are effective.

To investigate the effectiveness of blended courses, we conducted our study in the context of the *Academic Writing Skills* course offered by the Vanier College Language School, a department that reports to the Academic Dean of Vanier College. The students registered in this course are struggling to master the basics of writing skills in a second or third language. Many have only recently arrived in Québec, and they are eager to pursue their studies, but are held back because of their weak communication skills. Nonetheless, these students have many other skills and one of our goals is to capitalize on these. In particular, most of these students are computer literate and some have very advanced technical skills. By integrating web technologies into this course, we are validating their prior knowledge and experiences. We also want to be sensitive to their current situations; the blended course format allows for greater flexibility in terms of time and location, which is important for many of the students that have to care for young families or work long hours to support themselves.

In terms of pedagogy, we are aiming to measure both the quantity and quality of student learning that comes from integrating a web element into cégep courses. We expect that students will master a greater number of concepts, and be better able to apply these concepts in a practical setting. The research done to date does not point to any absolute conclusion with respect to this issue. Most

studies have found “no significant difference” between *fully* online courses and their F2F counterparts with respect to student performance (Thirunarayanan and Perez-Prado, 2001; King and Hildreth, 2001; Davies and Mendenhall, 1998; Smith et al, 2002). These results imply that students learn equally well, regardless of whether an instructor is physically present, and that no one delivery system has an absolute advantage over any other with respect to student performance (Marchand, 2001). With respect to blended courses, the results have been mixed and/or inconclusive. There is some evidence that when it comes to routine learning activities that tend to be close-ended (e.g. multiple choice, true and false, “skill and drill” questions), students do show moderate gains in achievement, but that in the case of more complex learning activities, the results are much less clear (Abrami et al., in progress). It may be that in blended courses that involve complex learning activities, students develop knowledge and skills that are not measured by traditional tools (Poellhuber and Boulanger, 2001). We anticipate that by carefully considering the dimensions of student performance, student persistence and student motivation, we will be able to more accurately assess the effectiveness of different learning environments and the extent to which these environments improve the quantity and quality of student learning.

b. Why the Constraint of Limited Resources and Minimal Technical Skills?

In an ideal world, educators would have ample resources to develop the learning environments of their choice. They could create virtual battlegrounds to

allow students to re-enact important moments in history, or they could program an array of fascinating chat buddies for second language students. The reality, however, is that cégep educators do not have access to large budgets that would allow them to develop such highly sophisticated, technology-intense learning environments. In addition, most do not have the requisite skills or training to create such environments (Abrami et al., in progress). Anecdotal evidence collected over the last few years at Vanier College suggests that these two factors, (1) limited technical ability, and (2) limited resources, are the primary impediments to the pedagogical integration of computers on the part of teachers.

Thus, without the infrastructure, resources, or training to support them, teachers who want to exploit the opportunities of technology-based learning are left to fly solo and take on the roles of curriculum designer, course developer, and/or web programmer. Many teachers are deterred by the seemingly arduous task of developing the online components of a blended course. They believe that such a task calls for strong technical skills and demands an incredible investment, both in time and energy. Since cost-intensive projects are not feasible for most cégep educators, we will constrain ourselves to cost-effective, small-scale projects that require a minimum of technical expertise.

Therefore, an integral part of our project will be the animation of professional development workshops that will guide educators in developing cost-effective projects that do not demand advanced technical skills. The first few workshops will focus on the epistemological beliefs of teachers and will motivate them to reflect on questions such as “what problems do I have in my

course, or what areas do I want to improve?" and then, "how can technology help me do this?" These workshops will be followed by workshops that introduce educators to the basics of creating a blended course by integrating an online component into their existing course. Participants will learn for instance how to create and moderate an online discussion forum using *FirstClass* or *vBulletin*. They will also be given a generic web-page template to help them get started in their project; they will learn how to add elements to this web page and how to keep it up to date. Participants will brainstorm a range of possible online activities and workshop leaders will guide them through the implementation of these activities. Further hands-on workshops will focus on the often-overlooked (Ouellet et al., 2000) pedagogical applications of computer technologies and address questions such as how, when and why to use online discussion forums and other interactive activities. This pedagogical element is critical to ensuring the quality of newly developed materials. The overall purpose of these workshops will be to show teachers that a small investment in time and energy can have significant payoffs in terms of student learning.

c. Why Second Language Acquisition?

Ultimately, our goal as educators is to facilitate student learning in a variety of contexts. This necessitates among other things that we recognize and appreciate the cultural and linguistic backgrounds of our students. At Vanier College, we work with a multiethnic student body. Our students come from 85 different countries and speak a multitude of languages. Approximately 60% of students who write the *Vanier College Admission Test* do not pass on their first attempt; most are writing in their second, third or fourth language. According to the English Department, of those who do pass and are admitted to the College, as many as 82.5% are required to take remedial English courses. English teachers and staff of The Learning Centre are continuously looking for news ways to help students improve their communication skills. Recent initiatives have included an expanded peer-tutoring program and workshops in conversation and writing skills.

The situation described above is not unique to Vanier College. The other anglophone cégeps must also contend to varying degrees with a significant population of second language learners. The francophone sector too is beginning to experience a similar phenomenon as the number of allophones registering in French cégeps continues to increase (Roberge, 2003). A recent study (Antoniades *et al*., 2001) found that these allophone students were often those at greatest risk of dropping out from the cégep system. It is therefore important to assist these students in improving their linguistic abilities; the results of such efforts could be dramatic, possibly going as far as preventing students

from abandoning their cégep studies. The results of our research will be directly applicable to the learning of both English and French as second languages.

Given the evidence that second language students are at greater risk of academic failure, one of our goals as educators should be to prepare these students for successful cégep experiences. As noted earlier, we will focus our study on students registered in the *Academic Writing Skills* course at the Vanier College Language School. This course is designed to prepare students for the Vanier College Admission Test, which tests their proficiency in reading and writing. Most of the students registered in this course have attempted the Vanier College Admission Test at least once and were not successful. They have therefore been advised to improve their English communication skills. Since language learning is basic to all other learning, proficiency in the language of instruction is crucial for their success at cégep, regardless of program. Therefore, the more students learn in this course, the greater their chance of success once they enter their cégep program of choice. We will also test materials and concepts in several sections of Effective Reading and Writing Skills, a credit course offered by the English Department for newly-admitted students with weak communication skills.

At the beginning of each session, the students in the *Academic Writing Skills* course are highly motivated since they know that they must improve their English skills in order to be admitted to the College. However, as the session progresses, their energy seems to wane. They are impatiently waiting to be admitted to their program of choice and they have difficulty maintaining their

interest in English for more than a few weeks. This lack of motivation hampers their success in the course, since they are no longer learning efficiently. For students who must repeat the course, this lack of motivation puts them at serious risk of giving up altogether and forsaking their cégep studies. This observation is consistent with the situation in the French cégeps, as described by Antoniades *et al*.(2001). We expect that by introducing a technology-based component to the *Academic Writing Skills* course, we will succeed in keeping the students more actively engaged in the learning process throughout the 8-week session. This in turn should improve their learning of English as a second language, and in particular, help them improve their reading and writing skills so that they can pass the Admission Test, and continue on to successful cégep studies.

At this point it is important to note that other studies have been conducted at the cégep level that looked at the effectiveness of integrating computer technologies (e.g. Poellhuber and Boulanger, 2001; Ouellet et al, 2000; Séguin, 1997). In particular, we can cite the work done at Vanier by Dedic et al.(2004) in mathematics and science. However, to our knowledge, similar studies have not been conducted in the context of second language learning. This is a relevant point because language learning differs from learning in other disciplines (e.g. mathematics) in fundamental ways.

Language learning is a social process that relies on interaction with other speakers or writers of the target language. What is said or written is determined by the social context. “Language (is) intercalated with life as it is lived, with actions, intentions, and events that are ongoing.” (Bruner,1984). Language is, by

its very nature, a social phenomenon that serves two basic needs: the need to express and the need to communicate (Wilkinson, 1971). Therefore, language cannot be learned in isolation. Students need to practise expressing their thoughts in the new language, to receive feedback from their peers or teachers, and then to practise again. Given the complexity of language, it can only be mastered after extensive exposure to its underlying structures. Students whose goals are to enter a cégep program can easily become discouraged if they do not progress as fast as they would like to. Interacting with other students then allows them to practise and develop their new language skills, but it also offers them the support of their peers, many of whom are facing similar challenges. The social context is thus crucial to the learning of language.

Language learning is also a creative process in that learners are always generating new text - each utterance is unique. Every situation brings to mind different thoughts, which must then be expressed with different words. Goelman (1984) argues that "the brain needs to create, and this creative process is facilitated through language. Written language in particular can construct any reality or possible world that is desired." There are no limits to what can be expressed through language. This dimension of language learning can be frustrating for learners. In many disciplines, students can and often do rely on memorizing facts and formulae. Many students believe that knowledge is absolute (Dedic et al., 2004). In a subject such as mathematics, they "generally perceive that…there is one right way, and if the teacher tells you that way, and you memorize or rehearse it often enough, then you have mastered it". Students

initially apply the same logic to language learning. They memorize new vocabulary items and verb conjugations, and then try to mechanically apply the rules of syntax to build sentences. But this is as far as they can get. There are no absolute "rules" for combining sentences into paragraphs, paragraphs into chapters, or ideas into essays. These decisions are all left to the speaker or the writer. This is such a demanding task that it is difficult, maybe even impossible, for learners to avoid mistakes. Students eventually realize that language learning is not simply a question of "right or wrong", but rather that there are varying shades of what is considered "correct".

Teachers and experts in disciplines other than language learning are likely to say that *all* learning relies on the social and creative elements described above. The important point, however, is not how experts view the learning process, but how students perceive it. Student perceptions are critical to their approach to a subject and have an impact on their motivation and attitudes. As long as they succeed in the course (i.e. achieve a grade that is satisfactory to them), they are not likely to change their basic epistemological beliefs. Students tend only to move beyond the "absolute knowledge" belief when it is no longer functional for them. When students studying a second language realize that this belief system is not working for them, most will eventually become more active participants in the learning process. As such, language learning is different from other types of learning; it is clear then that there is a need for a study that investigates the effectiveness of blended courses in the context of second language. Though the proposed study will be conducted with students learning

English, the results will apply directly to the situation of allophone students in francophone cégeps.

B. The Importance of Paradigm Consistency

Ultimately, the goal of our study is to measure the effectiveness of blended courses. As stated, to respond to the reality of the cégep world, we have added the constraint that these courses be developed with limited resources and minimal technical skills. To meet our objectives, we will be comparing two formats of the *Academic Writing Skills* course: **face-to-face** (F2F) and **blended**. We propose to do this by comparing the performance and motivation of students in the blended course with the performance and motivation of students in the F2F course. To make the study as controlled as possible, we will ensure that the only significant difference between the two formats of the course is the delivery method.

At first glance, designing a blended course might seem an easy task. However, it is not simply a matter of posting course notes onto the web. The term "shovelware" describes this tendency to load up the web with notes. Unfortunately, "traditional content delivery via written, oral, or visual lectures doesn't map well online" (Chamberlin, 2001). This **one-step** strategy, whereby teachers substitute technology for "chalk and talk" (e.g. substituting notes on the web for notes on the board), is easily implemented, inexpensive and not time-consuming. However, as Chamberlin (2001) suggests, simple substitution of the web for all or a portion of the F2F delivery system is not effective. Unfortunately, resorting to shovelware is not uncommon on the part of teachers, since

developing and implementing richer, more interactive web-based learning environments seems an overwhelming and daunting task to many.

An alternative to shovelware would be a website with a discussion forum, live chat, interactive exercises with immediate feedback, etc. We have opted for this interactive approach in planning the blended version of the *Academic Writing Skills* course. However, by doing so, we have encountered a problem in terms of comparing the blended course to the F2F course. By adding elements of interactivity to the blended course, we have essentially altered the pedagogical approach, and thus, the results of any study comparing the effectiveness of these two formats would lack validity. Unless we sure that the F2F delivery was highly interactive, we could not be sure whether the results obtained were due to the different **delivery systems** (our goal), or whether they were in fact due to disparate course designs resulting from different **pedagogical paradigms**.

Accordingly, we are proposing a **two-step** model for the development and evaluation of any online learning environment. The first step would be a **paradigm shift** and the second, a **delivery shift**. The paradigm shift would occur in several stages and would involve progressive modifications of the instructor's pedagogical approach. These modifications would not be applied directly to the online learning environment, but rather, they would serve as an intermediary step, and would first be applied to the F2F course. Only after the paradigm shift was complete, would the delivery shift be implemented. This second step would involve the implementation of the online learning environment, based on the modified design of the F2F class. All comparisons of

the blended course would thus be done with the redesigned F2F course, and therefore, when evaluating the effectiveness of the blended course, more valid comparisons would be possible. This two-step model is consistent with the position of Gallini and Barron (2001) who argue that "emphasis (be) given to the role of theoretically based frameworks to guide technology-mediated research and design".

C. Socio-Constructivism and Technology-Based Learning

There are several paradigms in education that could potentially guide the redesigning of the F2F course. A paradigm is a set of rules, implicit or explicit, which determines the limits within which an individual can act, and then which describes how an individual should act within these limits (Marchand, 2001). In accordance with *la réforme* of the MEQ and its competency-based programs (Viens, 2001; Ministère de l'éducation du Québec, 1997), we have chosen the **socio-constructivist** approach to be the common theoretical framework for all course formats.

Traditionally, college education has been characterized as a classroom setting with a professor lecturing, and students passively taking notes. The professor has often been seen as an authority figure, "the sage on the stage" (Shachar and Neumann, 2003). This model of teaching falls under the auspices of behaviourism or instructivism (Martel, 2002) with rewards for the successful regurgitation of instructor-selected information. This passive type of learning can be characterized as rote learning, which leaves the learner poorly equipped to transfer knowledge to other contexts or situations (e.g. memorizing new

vocabulary items and their definitions). In contrast, the constructivist approach is much more a model of learning that has as its main premise that learners actively construct knowledge (e.g. using a concordance to infer the meaning of new words and then using these words in a variety of settings.) They assimilate new knowledge with old knowledge, and make links with what they already know (Poellhuber, 2001; Liaw, 2001). Learning therefore depends on the level of mental activity, not on the passive reception of information. This type of learning is often referred to as meaningful learning.

Socio-constructivism adds to the main premise of constructivism by emphasizing the role of collaboration in acquiring new knowledge. Learning therefore takes on a more social dimension, and can be viewed as a "sophisticated conversation among instructors and peers" (Gallini and Barron, 2001). Viens (2001) argues that the socio-constructivist approach is characterized by four principles: **project teaching**, **learner autonomy**, **collaboration** and **meta-cognition**. A course that successfully integrates these four principles would, according to Viens, allow students to construct their own knowledge through the identification, formulation, discussion and resolution of questions or problems. Students would have the opportunity to exchange ideas and would be exposed to multiple perspectives on any given issue. This back-and-forth dialogue would allow students to rethink and reformulate their own stance, and would result in the use of higher-order cognitive processes (Bérubé and Caron-Bouchard, 2001). Knowledge is thus not seen as a static construct, but rather, as an evolving interpretation of experiences and information (Martel,

2002). Constructivism predicts that this knowledge (constructed by students themselves) would be “more flexible, transferable, and useful than knowledge transmitted to them (students) by an instructor or other delivery agent” (Cobb, 1999).

Many researchers in the field of education see computer technologies, especially web-based environments, as excellent vehicles for “enabling the objectives of constructivist principles” (Gallini and Barron, 2001; see also Poellhuber, 2001; Martel, 2002). For instance, debates posted on discussion forums encourage students to think more critically. By debating back-and-forth with others, students modify their original assumptions and gradually move to higher levels of understanding (Chamberlin, 2001; Poellhuber, 2001). Thus, online communication can be used to promote collaborative, reflective and active learning.

According to Apple Computers (Oeullet et al, 2000 and Séguin, 1997), the most relevant aspects of computer technologies to classroom instruction include (1) active learning; (2) autonomous learning; (3) cooperative learning; (4) interdisciplinary learning; and (5) individualized learning. It just so happens that these five elements are also critical to the socio-constructivist perspective. We selected a common paradigm (SC) for all course formats in order to respond to a methodological dilemma (i.e. to obtain valid results). However, we also expect that by motivating teachers to reflect on their teaching practices (and by extension, on their epistemological beliefs) and by guiding them through the process of integrating computer technologies into their classes, their approach to

teaching will tend towards the socio-constructivist vision. Most second language teachers have already started to move in this direction, at least philosophically; we will work with them to translate this new philosophy into practice.

D. Objectives

Anecdotal evidence from our discussions with some teachers at Vanier College suggests that students enjoy and benefit from the blended course format. The next step then is to systematically investigate how, why and to what extent blended courses are effective in improving student persistence, performance, and motivation, while being an appropriate instructional option for E.S.L. teachers at large. The primary focus of our proposed study is to measure the relative effectiveness of four instructional settings:

(1) Instructional setting I: F2F, traditional approach

(2) Instructional setting II: F2F, socio-constructivist approach

(3) Instructional setting III: Blended, traditional approach

(4) Instructional setting IV: Blended, socio- constructivist approach

Our specific objectives are as follows:

1. to determine whether blended courses developed with limited resources and minimal technical skills improve student outcomes in second language classrooms where the focus is on reading and writing skills;
2. to investigate the interaction between student characteristics, instructional setting and effectiveness and to identify differential effects with respect to gender, prior level of performance and prior level of motivation.

II. Methodology

In this chapter, we include a discussion of our methodology, as well as problems that we encountered along the way and the modifications that we therefore brought to the original research design.

Our primary objective in this project was to measure the **effectiveness** of **blended** courses that had been developed with **limited resources** and **minimal technical skills**, and which were used in a context of **second language acquisition (SLA)**.

As a sub-component of this project, we assisted teachers in the redesigning of the *Academic Writing Skills* course so that it integrated the main principles of the socio-constructivist approach and centered less on the transmission and acquisition of a given knowledge set, and more on the learning process of individual students. Elizabeth Murphy (1997) has developed an excellent checklist to facilitate the paradigm shift towards constructivism (Appendix 1). The checklist is designed to help teachers "observe some of the ways in which these constructivist characteristics are present in learning projects, activities and environments…. it should provide some insights into how constructivist concepts might be operationalized in an instructional setting." This checklist was used in meetings with teachers to help them assess to what extent their courses already contained socio-constructivist elements and to help them generate additional activities that would serve to give the courses a true socio-constructivist flavour.

This project involved (1) testing instructional settings that already existed, and (2) training teachers to develop and implement new instructional settings, and then testing these. Since, according to our two-step model, teachers redesigned their courses *before* moving to the blended format, we took advantage of the intermediate stages of our project to measure the effectiveness of alternative pedagogical designs. We measured the effectiveness of fully F2F courses that integrated socio-constructivist principles (i.e. comparison of instructional settings I and II.) We anticipated that the results of this sub-study would confirm our assumption that the socio-constructivist paradigm is more effective than the traditional magisterial approach. We also measured the effectiveness of blended courses that did not adhere to socio-constructivist principles and which limited the use of technology to activities such as emailing and posting notes on the web (i.e. comparison of instructional settings I and III.) We did not expect the results to speak favourably of this format. However, since a number of teachers currently opt for this particular format, it was important that we assess the effectiveness of it, and if the results were not impressive, that we suggest alternative formats (e.g. blended course adhering to socio-constructivist principles.)

A. Research Design

Given that the focus of this project was to study different instructional methods, we opted for a quasi-experimental design in which students in a control group could be compared to students in the various experimental groups who had experienced the different instructional settings and pedagogical approaches in an ESL course. A 2x2 factorial design was used to compare the **effectiveness** of instructional settings I to IV. This type of design, which includes both pre-tests and post-tests for participants in each of the settings, is a strong research design for applied situations such as the classroom. To assess the effectiveness of the four instructional settings, we examined the differences in values of the dependent variables across all of the settings.

In addition, at the end of the course we conducted open-ended interviews with a focus group of students from each section of the course and collected written feedback forms from all students and teachers participating in the project. The feedback focused attitudes and appreciation of the course format.

Participants:

Throughout the project we worked with the Vanier College Language School, which offers both part-time and full-time non-credit E.S.L. courses, and the Vanier College English Department. Prior to the project, all of the courses offered by both areas were delivered in the traditional classroom setting. However, as we were preparing the proposal for this project, the Language School was in the process of infusing web components into the *Academic Writing*

Skills (AWS) course, which prepares students to study in English at the college level. Many of the students who register for this course are recent immigrants to Canada and are initially not successful in passing the Vanier College Admission Test. They are therefore required to complete an E.S.L. course in order to improve their reading comprehension and writing skills.

The non-randomized sample of students consisted primarily of students registered in the non-credit, mise-à-niveau course, *Academic Writing Skills,* offered by the Vanier College Language School. The rest of the sample consisted of students registered in *Effective Reading and Writing*, a remedial ESL course offered for credit by the English Department to regular day students. Students were quasi-randomly assigned to classes at registration. We collected data from 165 students. The sample of students was intended to represent the population of pre-cégep students and newly admitted cégep students with weak communication skills.

Statement of Ethics:

The students were informed of the research project when they registered for a participating section of a course. Vanier College has an Advisory Committee that reviews research undertaken at the College and ensures that the rights of student subjects are protected. The research team received approval from this committee for both its research design and the consent forms that students were asked to sign granting researchers the right to collect data. All data was numerically coded to protect the identity of individual students (see Appendix 3).

B. Quantitative Data

The **independent variable** in the study was the instructional method, and there were two treatments: **blended course delivery system** and **socio-constructivist (SC) pedagogical approach.**

(1) Instructional setting I: F2F, traditional approach (already exists)

(2) Instructional setting II: F2F, SC approach (to be implemented)

(3) Instructional setting III: Blended, traditional approach (already exists)

(4) Instructional setting IV: Blended, SC approach (to be implemented)

The **dependent variables** in the study were: persistence; change in performance; change in motivation.

(1) **Persistence**: Student persistence, measured by in-class attendance, was compared across all four settings. For certain analyses, attendance by students was coded as: Poor (4 or more absences), medium (2-3 absences), good (0 or 1 absence).

(2) **Performance**: Performance was assessed by measuring student performance on a test with two types of questions: (a) open-ended questions that incorporate the main concepts of the course; (b) 500-word essay on a given topic. Student responses were scored according to objective criteria, coded and analysed by the research team. For certain analyses, performance was coded as weak (less than 60%), medium (60% to 80%), strong (more than 80%).

(3) **Motivation**: We adapted and translated a questionnaire developed by Lapostolle et al. (2003) and adapted from Viau and Louis (1997). This instrument measures motivation to improve in a second language in a school environment, and was tested and validated by Lapostolle et al. (2003). We translated the questionnaire, substituting learning English in the place of learning French (Appendix 2). Indicators of motivation include: Perceived Value of Reading, Perceived Value of Writing, Perceived Value of the Internet, Perceived Value of the Course Overall, Perceived Competence in Reading, Perceived Competence in Writing, Perceived Competence in the Course Overall, Learning Goals with Respect to Reading, Learning Goals with Respect to Writing, Learning Goals with Respect to Performance in Reading and Writing, Interest/Enjoyment, Use of Learning Strategies, Persistence in Reading and Writing, Perceived Pressure, Perceived Control over Course, Perceived Choice in Taking the Course

The questionnaire consists of 74 items, each belonging to one of 16 subscales. All items relate to one of four types of activities: reading, writing, use of the Internet, English course overall. Items relating to the same concept/subscale are interspersed throughout the questionnaire. For the first 60 items, students indicate their level of agreement with the statement by selecting one of six options ranging from *very much disagree* to *very much agree*. For the last 14 items, students indicate the frequency

at which they perform the stated activity; again they are given six options ranging from *never* to *always*.

Concepts, number of items per concept and type of scale per concept for motivational dynamics questionnaire

Concept	**Number of Items**	**Type of Scale**
1. Perceived Value – Reading	4	Agreement
2. Perceived Value – Writing	3	Agreement
3. Perceived Value – Internet	4	Agreement
4. Perceived Value – Course	5	Agreement
5. Perceived Competence – Reading	5	Agreement
6. Perceived Competence – Writing	5	Agreement
7. Perceived Competence – Course	2	Agreement
8. Learning Goal – Reading	3	Agreement
9. Learning Goal – Writing	5	Agreement
10. Learning Goal – Performance – reading and writing	4	Agreement
11. Interest/Enjoyment	4	Agreement
12. Learning Strategies	10	Frequency
13. Persistence – reading and writing	4	Frequency
14. Perceived Pressure	6	Agreement
15. Perceived Control over Course	3	Agreement
16. Perceived Choice	7	Agreement
Note that we added concepts 3, 4, 7, 14, 15, 16 to the questionnaire developed by Lapostolle et al. (2003).		

The questionnaire was administered to all students both at the beginning and at the end of the semester. Students responded either to a hard copy version of the questionnaire or to an online version, depending on the research group to which they belonged.

The **control variables** in the study were: prior level of performance, gender and level of technical skills.

(1) **Prior level of performance**: Pre-test scores on essays written at the beginning of the semester assessed students' prior level of performance

(2) **Gender**: One of the questionnaires included demographic data such as gender (Appendix 4).

(3) **Level of technical skills**: A questionnaire was administered to all students to measure their level of computer knowledge. This variable was eliminated once it was determined that there was very little variation in the level of computer knowledge among students – just about every student had experience with MS Word, Internet Explorer, emailing, instant messaging, playing video or audio files, using file attachments and searching the Internet (Appendix 5). Most students also had experience participating in discussion forums, and many also had experience in creating webpages and posting to blogs.

Other variables:

(1) **Online participation by students:** Statistics were collected on the level of student online activity over the semester (number of posts, replies, views on the course blog, as well as completion of online activities/assignments). Students were categorized as complete (12+posts), partial (8-11 posts) or fail (less than 8 posts), in reference to their level of online activity.

(2) **Level of teacher online activity:** Statistics were collected on the level of teacher online activity over the semester (number of posts, replies, views on the course blog). Teachers were categorized as very active (6+ posts per student), medium active (4 or 5 posts per student) or not active (less than 4 posts per student), in reference to their level of online activity.

(3) **Student feedback/attitude:** Questionnaires distributed at the end of each semester collected feedback from students about the course and the online activities, if applicable. Responses were analysed and student feedback/attitude towards online learning was categorized as positive, quasi-neutral or negative (Appendix 6).

(4) **Teacher attitude towards online learning:** Teachers gave their feedback about the course either in written form, or in response to a series of interview questions. Responses were analysed and teacher attitude towards online learning was categorized as very positive, positive, quasi-neutral or negative (Appendix 7).

C. Qualitative Data

(1) **Motivation and Feedback:** A series of group interviews were held at the end of each semester. Participation in the interviews was completely voluntary. We invited students to participate in interviews and explained that it was completely voluntary. We emphasized the value of hearing what they had to say about the course and that we were doing this to improve upon the format of the courses. Each group

consisted of 4-6 students. The interview protocol consisted of 8 questions (Appendix 8); these questions served to launch discussion and give some structure to the interview, but students were allowed to go off topic and talk about other aspects of the course and share their feelings about the course. Each session lasted between 20 and 35 minutes. The interviews were transcribed by a research assistant. The results of the interviews served primarily to clarify the findings of the motivation questionnaire.

(2) **Essay-Writing Process:**

i. **Knowledge Questionnaire:** Given that no existing instruments fit our purposes (to measure students' knowledge about essay writing) we developed a questionnaire with 6 open-ended questions (Appendix 9). The questions follow the development of a typical essay and were developed in conjunction with staff from The Learning Centre, the Language School and teachers from the English Department. We tested the instrument with a group of 20 students in Fall 2004, and based on feedback, modified the instrument and used this second version in Winter 2005 and thereafter. The questionnaire was either completed online or in class, depending on the group.

ii. **Student Essays:** While the Knowledge questionnaires sought to determine what students say about the process of writing an essay, actual student were then examined to determine whether they

actually “do what they say”. Essays were analyzed at the beginning and at the end of the course to determine whether they contained the important components of a five-paragraph essay: Introduction, Body, Conclusion; Thesis statement; Topic Sentences; Arguments and examples (Appendix 10).

D. Data Analysis

a. Quantitative Data

For each student in all settings, a score representing the rate of change on each of the sub-scales of the inventory was calculated by subtracting the initial score from the final score on the scale. Students who did not complete the inventories at both the beginning and end of the semester were eliminated from the sample for the purposes of this analysis.

Analyses of variance were performed on each of the sub-scales (Appendix 11). The initial analysis measured variations in the rate of change between instructional settings. The analysis then proceeded to compare the difference in the rates of change between the genders, between settings taking gender and prior achievement into account, and finally to explore the interaction between gender, prior achievement and instructional setting.

Data from the blended socio-constructivist setting (Setting IV) was analyzed separately to determine the relationships between student online participation, gender, level of teacher online activity, student feedback/attitude, prior achievement, persistence, teacher attitude and final achievement. These relationships were assessed using either chi-square tests or the Fisher Exact

Probability test, which was used when sample sizes were too small for the chi-square test.

b. Qualitative Data

Responses to questions on the Knowledge Questionnaire were analysed through quantitative content analysis. We used emergent categories for the analysis; that it, we did not determine the categories of analysis a priori – they emerged from the data. Data was copied to a word document and sorted by subject number. The first step in the analysis was open coding, that is, coding for categories. We proceeded as follows: we identified categories in first document analysed; then we compared subsequent documents to 1st, 2nd,3rd, etc, always striving for constant comparison. We continued in this way until no new categories emerged from the data (i.e. until we had reached saturation.)

Once open coding was complete, a thorough review was done to ensure the consistency of the coding throughout all the data. Some changes were made at this point given that we had a developed a greater understanding of each category and its properties.

As we went along, we created a codebook in which we recorded all categories, their descriptions and examples of each (Appendix 12). We then referred to the codebook for all subsequent coding and reviews. Along with the codebook, we recorded all phrases and expressions that we coded as one category; this served to ensure construct validity and internal validity. Once all the coding was done, we tabulated the data in terms of frequencies and rates of

change over the semester, and proceeded to make comparisons between settings.

In contrast to the Knowledge Questionnaire, the student essays were analysed through content analysis, but in this case, the categories were defined by the researchers prior to the analysis. Given that the essays served as one indicator of student performance, it was important to code them with respect to what essay components they included and what ones were missing (e.g. introduction, thesis statement, ect.) Scores for the essays were obtained by attributing one point for each component present in the essay, resulting in a score out of 12 (see essay coding sheet for more details, Appendix 13).

E. Description of Four Instructional Settings and Development of Setting IV

a. Instructional Setting I

Instructional setting I essentially represented the existing format of the course (traditional pedagogical approach, face-to-face delivery) and no changes were brought to the course in this phase of the project.

b. Instructional Setting II

Instructional setting II was the face-to-face, socio-constructivist delivery of the course. No online activities were implemented for this setting, but it was taught according to socio-constructivist principles. One typical example of a socio-constructivist activity was to have students construct knowledge about the structure of an essay. This involved giving them a text to read and then having them study its structure on their own, generate a hypothesis regarding essay

structure in general, discuss their ideas with classmates and come to a class-wide consensus. This approach requires students to think more deeply and actively about how and why an essay is structured in a given way.

c. Instructional Setting III

Instructional setting III was the blended, traditional delivery of the course. The online component of the course simply involved posting notes and homework to a course website, and as such, the course was not taught according to socio-constructivist principles.

d. Instructional Setting IV

Instructional setting IV was the blended, socio-constructivist delivery of the course. The online component involved interactive activities, such as online discussions and vocabulary exchange, blogging, and web quests. The course was taught using socio-constructivist principles, with activities similar to the one described in instructional setting II, as well as online activities involving these same principles.

e. Development of Setting IV

The tools listed below were used in the development of the online component of instructional setting IV. Recall that an important constraint in this project was that all online content be developed with limited resources and minimal technical skills. As such, the tools listed below are easy to use and, with the exception of Dreamweaver MX, free of charge.

- Course website: Dreamweaver MX

- Online surveys: Survey Monkey (http://www.surveymonkey.com/)
- Online forums and discussion boards: Invisionfree (http://invisionfree.com/)
- Online grammar exercises: Hot Potatoes (http://hotpot.uvic.ca/)
- Webquests: Filamentality (http://keithstanger.com/filamentality.html)

III. Quantitative Results

After five semesters of data collection, we proceeded to an analysis of variance to explore the effects of instructional setting, using changes in achievement and in motivation. This analysis came ultimately to include an exploration of the interactions between instructional setting, gender, and achievement as well as between instructional setting, gender, and motivation. However, it is useful, for the purposes of clarity, to begin our discussion by looking at the results obtained for achievement, which limits itself to the effects of instructional setting and gender on the changes in achievement; this score is based on the change between pre-test and post-test scores on a test consisting of two parts: 1. a short-answer questionnaire, or "Knowledge Questionnaire," incorporating the main concepts of the course (i.e. the essay-writing process) and a 500-word essay on a given topic. Students who were missing any given item on either of these two tests were omitted from the study.

A. Achievement

a. The Effects of Instructional Setting and Gender

The cluster of data in this section represents the rate of change in achievement over the semester. This change, calculated by subtracting the pre-test score from the post-test score, was analysed for variation between blended and non-blended instructional settings, between socio-constructive and non-socio-constructive settings, and between genders, first looking at the effects of instructional setting and the interaction between settings, and then looking at the

effects of instructional setting, gender, and any interaction between variables. Later, prior achievement was also taken into account. Persistence, which can be defined as in-class attendance, and its effect were also analyzed.

1. Setting

Overall, as illustrated in table III.1, there was a significant difference (p = 0.045) between socio-constructivist and non-socio-constructivist instructional settings, with students in the non-socio-constructivist setting having a higher change in achievement (mean = 2.517) than those in the socio-constructivist setting (mean = 1.409). Note here that the pre and post tests were scored out of 12. The greatest change in achievement occurred among students in the non-socio-constructivist / non-blended setting (i.e. the traditional face-to-face, non-interactive setting).

Table III.1. The Effect of Instructional Setting on Achievement Gain

Source	SS	df	MS	F	P
Blended	1.33	1	1.33	0.21	0.648
Socioconstructivist	25.87	1	25.87	4.11	0.045
Blended x Socioconstructivist	17.3	1	17.3	2.75	0.100
Error	641.75	102	6.29		
Total	681.97	105			

Means	Socio-constructivist	Non-Socio-constructivist	Total
Blended	1.574	1.958	1.637
Non-Blended	0.781	2.912	1.879
Total	1.409	2.517	1.712

The relationship between instructional setting and final achievement was analyzed using a chi-square test. In this analysis, each different instructional setting was looked at individually rather than grouped according to whether it was

blended and/or socio-constructive. Final achievement differs from achievement gain in that it is simply the final score on the post-test that is taken into account and not the change from pre-test to post-test. Final post-test scores were categorized into strong, medium, or weak scores, and the number of students in each category was determined for each setting. Instructional setting was found to have an effect on final achievement for all students ($p = 0.050$), but not when males and females are looked at separately (Tables III.2-III.4). Although there was no significant relationship between instructional setting and final achievement for females, there may have still been an effect ($p = 0.065$, Table III.4).

Table III.2. The Relationship between Instructional Setting and Final Achievement

All students	Strong	Medium	Weak	**Total**
I	4	5	9	18
II	2	6	9	17
III	7	5	3	15
IV	25	32	16	73
Total	38	48	37	123

Chi-Square	df	P
12.58	6	0.050

Table III.3. The Relationship between Instructional Setting and Final Achievement for Males

Males	Strong	Medium	Weak	**Total**
I	0	2	3	5
II	2	2	3	7
III	3	2	1	6
IV	12	10	9	31
Total	17	16	16	49

Chi-Square	df	P
4.44	6	0.617

Table III.4. The Relationship between Instructional Setting and Final Achievement for Females

Females	Strong	Medium	Weak	**Total**
I	4	3	6	13
II	0	4	6	10
III	3	3	2	8
IV	13	21	7	41
Total	20	31	21	72

Chi-Square	df	P
11.89	6	0.065

2. Gender

The data would seem to indicate that there was a significant effect of instructional setting, specifically between socio-constructivist and non-socio-constructivist settings, on student achievement. This effect may also have been observed when gender was taken into account, but the difference in this case was not significant (p = 0.064; Table III.2). A difference between genders may also have been observed, with females (mean = 2.015) having a more positive change in achievement overall than males (mean = 1.105), but it is also insignificant (p = 0.077). There was no evidence of any interaction between different instructional settings or between these settings and gender.

Table III.5. The Effect of Instructional Setting and Gender on Achievement Gain

Source	SS	df	MS	F	P
Gender	20.06	1	20.06	3.19	0.077
Blended	1.79	1	1.79	0.28	0.598
Socioconstructivist	22.1	1	22.1	3.51	0.064
Gender x Blended	0.02	1	0.02	0	1.000
Gender x Socioconstructivist	-2.4	1	-2.4	-0.38	NaN
Blended x Socioconstructivist	15.54	1	15.54	2.47	0.119
Gender x Blended x Socioconstructivist	6.8	1	6.8	1.08	0.301
Error	610.22	97	6.29		
Total	674.13	104			

Means for Males	Socio-constructivist	Non-Socio-constructivist	Total
Blended	1.021	1.75	1.125
Non-Blended	0.833	1.375	1.05
Total	0.983	1.563	1.105

Means for Females	Socio-constructivist	Non-Socio-constructivist	Total
Blended	1.932	1.714	1.898
Non-Blended	0.75	3.385	2.239
Total	1.681	2.8	2.015

A chi-square test was also done to determine if there was a relationship between gender and final achievement. However, final achievement was not found to be contingent upon gender (Table III.6).

Table III.6. The Relationship between Gender and Final Achievement

All students	Strong	Medium	Weak	**Total**
Male	17	16	16	49
Female	20	32	21	73
Total	37	48	37	122

Chi-Square	df	P
1.59	2	0.451

b. The Effects of Instructional Setting, Gender, and Prior Achievement

In order to further refine our understanding of the effect of instructional setting, the students' prior achievement level was used as a possible confounding factor in the study. For this purpose, an analysis of covariance was performed using pre-test scores as the concomitant variable and change in achievement or change in the different scales of motivation as the dependent variable. Means were adjusted accordingly.

Overall, taking prior achievement into account, there was a significant difference between settings with blended and face-to-face delivery (p = 0.038), with those with blended delivery having a more positive change in achievement (adjusted mean = 1.997) than those with face-to-face delivery (adjusted mean = 1.083; Table III.7). Although there appears to be an effect of instructional setting overall, specifically when taking prior achievement into account for blended and face-to-face delivery, this effect, or any other, was not observed on achievement gain among male participants (Table III.8). In contrast, blended delivery was significantly different from face-to-face delivery (p = 0.029) for female participants, with blended delivery having a more positive effect on achievement (adjusted mean = 2.432) than the non-blended setting face-to-face delivery (adjusted mean = 1.217; Table III.9). Although the interaction between instructional settings is insignificant (p = 0.079), there may have still been an effect.

Table III.7. The Effect of Instructional Setting and Prior Achievement on Achievement Gain

Source	SS	df	MS	F	P
Blended	16.94	1	16.94	4.42	0.038
Socioconstructivist	0.46	1	0.46	0.12	0.730
Blended x Socioconstructivist	8.14	1	8.14	2.12	0.149
Remainder	348.51	98	3.56		
Adjusted Error	387.17	101	3.83		

Observed Means	Socio-constructivist	Non-Socio-constructivist	Total
Blended	1.574	1.958	1.637
Non-Blended	0.781	2.912	1.879
Total	1.409	2.517	1.712

Adjusted Means	Socio-constructivist	Non-Socio-constructivist	Total
Blended	1.960	2.183	1.997
Non-Blended	0.566	1.570	1.083
Total	1.670	1.824	1.712

Table III.8. The Effect of Instructional Setting and Prior Achievement on Achievement Gain for Males

Source	SS	df	MS	F	P
Blended	1.62	1	1.62	0.49	0.489
Socioconstructivist	0.02	1	0.02	0.01	0.921
Blended x Socioconstructivist	0.67	1	0.67	0.2	0.658
Remainder	105.17	30	3.51		
Adjusted Error	108.96	33	3.3		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.021	1.75	1.125
Non-Blended	0.833	1.375	1.05
Total	0.983	1.563	1.105

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.169	1.609	1.232
Non-Blended	0.792	0.688	0.750
Total	1.094	1.149	1.105

Table III.9. The Effect of Instructional Setting and Prior Achievement on Achievement Gain for Females

Source	SS	df	MS	F	P
Blended	19.37	1	19.37	5.03	0.029
Socioconstructivist	0.13	1	0.13	0.03	0.863
Blended x Socioconstructivist	12.31	1	12.31	3.2	0.079
Remainder	211.48	59	3.58		
Adjusted Error	238.77	62	3.85		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.932	1.714	1.898
Non-Blended	0.75	3.385	2.239
Total	1.681	2.8	2.015

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	2.422	2.484	2.432
Non-Blended	0.370	1.869	1.217
Total	1.986	2.084	2.015

c. Persistence

Persistence, which was measured by in-class attendance, was divided into four categories: good, 1 absence or less; medium, 2 to 4 absences; poor, 5 or more absences; and drop, the student dropped the course and failed to complete any post-tests. The relationships between persistence and gender, setting, and final achievement were assessed using chi-square tests. Gender was found to have no effect on persistence (Table III.10).

Table III.10. The Relationship between Gender and Persistence

All students	Good	Medium	Poor	Drop	**Total**
Male	51	20	12	4	87
Female	83	15	9	7	114
Total	134	35	21	11	201

Chi-Square	df	P
6.09	3	0.107

The relationship between persistence and setting was analyzed including and not including the students who dropped the course. Setting was found to have an effect on all students with ($p = 0.008$) and without ($p = 0.009$) those who dropped the course but not when males and females were looked at separately (Tables III.11-III.16).

Table III.11. The Relationship between Persistence and Setting with Drop

All students	Good	Medium	Poor	Drop	**Total**
I	20	4	9	8	41
II	16	10	3	2	31
III	14	3	9	8	34
IV	87	22	14	17	140
Total	137	39	35	35	246

Chi-Square	df	P
22.19	9	0.008

Table III.12. The Relationship between Persistence and Setting without Drop

All students	Good	Medium	Poor	**Total**
I	20	4	9	33
II	16	10	3	29
III	14	3	9	26
IV	87	22	14	123
Total	137	39	35	211

Chi-Square	df	P
17.15	6	0.009

Table III.13. The Relationship between Persistence and Setting with Drop for Males

Males	Good	Medium	Poor	Drop	**Total**
I	7	1	1	2	11
II	5	5	0	0	10
III	4	0	2	0	6
IV	35	14	9	2	60
Total	51	20	12	4	87

Chi-Square	df	P
14.36	9	0.110

Table III.14. The Relationship between Persistence and Setting without Drop for Males

Males	Good	Medium	Poor	**Total**
I	7	1	1	9
II	5	5	0	10
III	4	0	2	6
IV	35	14	9	58
Total	51	20	12	83

Chi-Square	df	P
8.54	6	0.201

Table III.15. The Relationship between Persistence and Setting with Drop for Females

Females	Good	Medium	Poor	Drop	**Total**
I	12	1	1	0	14
II	7	3	2	1	13
III	8	2	3	1	14
IV	56	9	3	5	73
Total	83	15	9	7	114

Chi-Square	df	P
9.5	9	0.392

Table III.16. The Relationship between Persistence and Setting with Drop for Females

Females	Good	Medium	Poor	**Total**
I	12	1	1	14
II	7	3	2	12
III	8	2	3	13
IV	56	9	3	68
Total	83	15	9	107

Chi-Square	df	P
8.49	6	0.204

The relationship between persistence and final achievement was analyzed omitting the students who had dropped the course since these students had not completed the post-tests. No significant relationship was found between persistence and final achievement. This was observed for all students, as well as for only males and females (Tables III.17-III.19).

Table III.17. The Relationship between Persistence and Final Achievement

All students	Good	Medium	Poor	**Total**
Strong	30	4	3	37
Medium	40	3	4	47
Weak	27	2	6	35
Total	27	2	6	119

Chi-Square	df	P
2.68	4	0.613

Table III.18. The Relationship between Persistence and Final Achievement for Males

Males	Good	Medium	Poor	**Total**
Strong	12	3	2	17
Medium	13	0	3	16
Weak	11	1	3	15
Total	36	4	8	48

Chi-Square	df	P
3.67	4	0.453

Table III.19. The Relationship between Persistence and Final Achievement for Females

Females	Good	Medium	Poor	**Total**
Strong	18	1	1	20
Medium	27	3	1	31
Weak	16	1	3	20
Total	61	5	5	71

Chi-Square	df	P
3.23	4	0.520

B. Motivation

a. The Effects of Instructional Setting and Gender

In this section, we look at the change in motivation over the semester. This change was calculated by subtracting the pre-test score from the post-test score on different subscales of the motivation questionnaire described in the Methodology section of this report. The specific questions corresponding to each of the scales of the questionnaire are contained in the appendices. In all cases, appropriate average item scores were used for any individual items that had been omitted by the student. The change in motivation for each subscale was also analysed for variation between blended and non-blended instructional settings, between socioconstructive and non-socioconstructive settings, and

between genders, first looking at the effects of instructional setting and the interaction between settings, and then looking at the effects of instructional setting, gender, and any interaction between variables.

1. Pressure

A significant difference (p = 0.031) was found between blended and non-blended instructional settings, with students in the blended setting having a higher gain in the level of pressure (mean = 0.480) than those in the non-blended setting (mean = -2.083; Table III.20). The lowest gain in level of pressure occurred among students in the socioconstructivist / non-blended setting (mean = -2.706). This effect was also observed when gender was taken into account (p = 0.032); however, gender itself had little effect (Table III.21). There was nevertheless some evidence of an interaction between gender and socioconstructivist / non-socioconstructivist setting, but it was not significant (p = 0.086). Note here that the pre and post tests were scored out of 36, as 6 questions on the Motivation questionnaire represented the students' perception of the level of pressure in the course, and 6 was the highest score one could obtain on a question.

Table III.20. The Effect of Instructional Setting on Gain in Level of Pressure Experienced by Students

Source	SS	df	MS	F	P
Blended	117.88	1	117.88	4.82	0.031
Socioconstructivist	11.33	1	11.33	0.46	0.499
Blended x Socioconstructivist	8.87	1	8.87	0.36	0.55
Error	2227.16	91	24.47		
Total	2372.47	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.351	1.007	0.480
Non-Blended	-2.706	-0.571	-2.083
Total	-0.351	0.481	-0.167

Table III.21. The Effect of Instructional Setting and Gender on Gain in Level of Pressure Experienced by Students

Source	SS	df	MS	F	P
Gender	4.49	1	4.49	0.18	0.672
Blended	117.88	1	117.88	4.77	0.032
Socioconstructivist	11.33	1	11.33	0.46	0.499
Gender x Blended	2.37	1	2.37	0.1	0.753
Gender x Socioconstructivist	74.66	1	74.66	3.02	0.086
Blended x Socioconstructivist	16.1	1	16.1	0.65	0.422
Gender x Blended x Socioconstructivist	-2.67	1	-2.67	-0.11	NaN
Error	2148.31	87	24.69		
Total	2372.47	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.296	3.775	0.776
Non-Blended	-2.778	3	-1.727
Total	-0.518	3.517	0.088

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.394	-0.1	0.276
Non-Blended	-2.625	-2	-2.385
Total	-0.21	-0.733	-0.353

2. Value – Reading

Although no significant difference (p = 0.062) was found between blended and non-blended instructional settings, there may have been an effect, as students in the non-blended setting had a slightly higher gain in the perceived value of reading (mean = 0.486) than those in the blended setting (mean = -0.578; Table III.22). The highest gain in the perceived value of reading occurred among students in the traditional non-socioconstructivist / non-blended setting (mean = 0.714). The small but not significant effect of blended / non-blended

setting, however, was also observed when gender was taken into account (p = 0.066; Table III.23). Although, gender itself had little effect, there was some evidence of an interaction between blended / non-blended and socioconstructivist / non-socioconstructivist settings, but it was also not significant (p = 0.100). Note that the pre and post tests were scored out of 24.

Table III.22. The Effect of Instructional Setting on Gain in Perceived Value of Reading

Source	SS	df	MS	F	P
Blended	20.29	1	20.29	3.56	0.062
Socioconstructivist	12.88	1	12.88	2.26	0.136
Blended x Socioconstructivist	12.99	1	12.99	2.28	0.135
Error	518.03	91	5.69		
Total	567.39	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.263	-1.857	-0.578
Non-Blended	0.392	0.714	0.486
Total	-0.113	-1	-0.309

Table III.23. The Effect of Instructional Setting and Gender on Gain in Perceived Value of Reading

Source	SS	df	MS	F	P
Gender	11.08	1	11.08	1.89	0.178
Blended	20.29	1	20.29	3.47	0.066
Socioconstructivist	12.88	1	12.88	2.2	0.142
Gender x Blended	-0.71	1	-0.71	-0.12	NaN
Gender x Socioconstructivist	-1.17	1	-1.17	-0.2	NaN
Blended x Socioconstructivist	16.19	1	16.19	2.77	0.100
Gender x Blended x Socioconstructivist	-0.14	1	-0.14	-0.02	NaN
Error	508.97	87	5.85		
Total	567.39	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.12	-1.75	-0.138
Non-Blended	0.741	0.5	0.697
Total	0.284	-1	0.092

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.563	-1.9	-0.881
Non-Blended	0	0.8	0.308
Total	-0.45	-1	-0.6

3. Value – Writing

Although no significant difference (p = 0.055) was found between socioconstructivist and non-socioconstructivist instructional settings, there may have been an effect, as students in the socioconstructivist setting had a slightly higher gain in the perceived value of writing (mean = 0.487) than those in the non-socioconstructivist setting (mean = -0.381; Table III.24). The highest gain in the perceived value of writing occurred among students in the socioconstructivist / non-blended setting (mean = 0.765). Note here that the pre and post tests were scored out of 18. The small but not significant effect of socioconstructivist / non-socioconstructivist setting, however, was also observed when gender was taken into account (p = 0.057), but gender itself had no effect (Table III.25). There was no evidence of any interaction between different instructional settings or between these settings and gender.

Table III.24. The Effect of Instructional Setting on Gain in Perceived Value of Writing

Source	SS	df	MS	F	P
Blended	1.96	1	1.96	0.6	0.441
Socioconstructivist	12.31	1	12.31	3.78	0.055
Blended x Socioconstructivist	0.3	1	0.3	0.09	0.765
Error	296.21	91	3.26		
Total	311.75	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.404	-0.571	0.211
Non-Blended	0.765	0	0.542
Total	0.487	-0.381	0.295

Table III.25. The Effect of Instructional Setting and Gender on Gain in Perceived Value of Writing

Source	SS	df	MS	F	P
Gender	0.06	1	0.06	0.02	0.888
Blended	1.96	1	1.96	0.59	0.444
Socioconstructivist	12.31	1	12.31	3.73	0.057
Gender x Blended	1.06	1	1.06	0.32	0.573
Gender x Socioconstructivist	8.64	1	8.64	2.62	0.109
Blended x Socioconstructivist	1.27	1	1.27	0.38	0.539
Gender x Blended x Socioconstructivist	-0.23	1	-0.23	-0.07	NaN
Error	286.68	87	3.3		
Total	311.75	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.6	-1.5	0.310
Non-Blended	0.667	-1	0.364
Total	0.618	-1.333	0.325

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.25	-0.2	0.143
Non-Blended	0.875	0.4	0.692
Total	0.375	0	0.273

4. Value – Course

Instructional setting had no significant effect on the perceived value of the course (Table III.26). Note here that the pre and post tests were scored out of 30. The highest gain in perceived value of the course occurred among students in the traditional non-socioconstructivist / non-blended setting (mean = 0.714). This appeared to also be the case when gender was taken into account (Table III.27). Although, gender itself had little effect, there was some evidence of an interaction

between gender and blended / non-blended setting, but it was not significant (p = 0.057).

Table III.26. The Effect of Instructional Setting on Gain in Perceived Value of the Course

Source	SS	df	MS	F	P
Blended	5.14	1	5.14	0.81	0.371
Socioconstructivist	1.92	1	1.92	0.3	0.585
Blended x Socioconstructivist	14.28	1	14.28	2.25	0.137
Error	578.84	91	6.36		
Total	600.8	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.333	-1.357	-0.535
Non-Blended	-0.294	0.714	0
Total	-0.324	-0.667	-0.4

Table III.27. The Effect of Instructional Setting and Gender on Gain in Perceived Value of the Course

Source	SS	df	MS	F	P
Gender	0.39	1	0.39	0.06	0.807
Blended	5.14	1	5.14	0.82	0.368
Socioconstructivist	1.92	1	1.92	0.31	0.579
Gender x Blended	23.21	1	23.21	3.71	0.057
Gender x Socioconstructivist	0.47	1	0.47	0.08	0.778
Blended x Socioconstructivist	14.9	1	14.9	2.38	0.127
Gender x Blended x Socioconstructivist	11.36	1	11.36	1.82	0.181
Error	543.41	87	6.25		
Total	600.8	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.32	0	-0.276
Non-Blended	-0.778	-2	-1
Total	-0.441	-0.667	-0.475

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.344	-1.9	-0.714
Non-Blended	0.25	1.8	0.846
Total	-0.225	-0.667	-0.346

5. Value – Internet

Instructional setting had no significant effect on the perceived value of the Internet (Table III.28). Note that the pre and post tests were scored out of 24. The highest gain in perceived value of the course occurred among students in the traditional non-socioconstructivist / non-blended setting (mean = 0.976). This appeared to also be the case when gender was taken into account (Table III.29). There was also no evidence of any interaction between different instructional settings or between these settings and gender.

Table III.28. The Effect of Instructional Setting on Gain in Perceived Value of the Internet

Source	SS	df	MS	F	P
Blended	9.14	1	9.14	0.68	0.412
Socioconstructivist	0.43	1	0.43	0.03	0.863
Blended x Socioconstructivist	1.55	1	1.55	0.11	0.741
Error	1226.15	91	13.47		
Total	1237.65	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.199	-0.238	0.113
Non-Blended	0.765	0.976	0.826
Total	0.329	0.167	0.293

Table III.29. The Effect of Instructional Setting and Gender on Gain in Perceived Value of the Internet

Source	SS	df	MS	F	P
Gender	12.4	1	12.4	0.91	0.343
Blended	9.14	1	9.14	0.67	0.415
Socioconstructivist	0.43	1	0.43	0.03	0.863
Gender x Blended	3.27	1	3.27	0.24	0.625
Gender x Socioconstructivist	20.14	1	20.14	1.48	0.227
Blended x Socioconstructivist	1.93	1	1.93	0.14	0.709
Gender x Blended x Socioconstructivist	5.84	1	5.84	0.43	0.514
Error	1184.5	87	13.61		
Total	1237.65	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.04	-1.583	0.678
Non-Blended	0.778	1	0.818
Total	0.971	-0.722	0.717

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.458	0.3	-0.278
Non-Blended	0.75	0.967	0.833
Total	-0.217	0.522	-0.015

6. Perceived Competence – Reading

A significant difference (p = 0.008) was found between blended and non-blended instructional settings, with students in the non-blended setting having a higher gain in their perceived competence in reading (mean = 2.625) than those in the blended setting (mean = 0.470; Table III.30). Note here that the pre and post tests were scored out of 24. The highest gain in perceived competence occurred among students in the socioconstructivist / non-blended setting (mean = 2.706). This effect was also observed when gender was taken into account (p = 0.008); however, gender itself had little effect (Table III.31). There was also no evidence of any interaction between different instructional settings or between these settings and gender.

Table III.30. The Effect of Instructional Setting on Gain in Perceived Competence in Reading

Source	SS	df	MS	F	P
Blended	83.27	1	83.27	7.3	0.008
Socioconstructivist	0.31	1	0.31	0.03	0.863
Blended x Socioconstructivist	0.89	1	0.89	0.08	0.778
Error	1038.66	91	11.41		
Total	1124.13	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.550	0.148	0.470
Non-Blended	2.706	2.429	2.625
Total	1.045	0.908	1.015

Table III.31. The Effect of Instructional Setting and Gender on Gain in Perceived Competence in Reading

Source	SS	df	MS	F	P
Gender	3.65	1	3.65	0.32	0.573
Blended	83.27	1	83.27	7.28	0.008
Socioconstructivist	0.31	1	0.31	0.03	0.863
Gender x Blended	20.05	1	20.05	1.75	0.189
Gender x Socioconstructivist	1.84	1	1.84	0.16	0.690
Blended x Socioconstructivist	1.88	1	1.88	0.16	0.690
Gender x Blended x Socioconstructivist	17.44	1	17.44	1.52	0.221
Error	995.69	87	11.44		
Total	1124.13	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.44	0.85	0.497
Non-Blended	2.111	-1	1.546
Total	0.882	0.233	0.785

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.635	-0.133	0.452
Non-Blended	3.375	3.8	3.539
Total	1.183	1.178	1.182

7. Perceived Competence – Writing

Instructional setting had no significant effect on perceived competence in writing (Table III.32). This appeared to also be the case when gender was taken into account (Table III.33). There was also no evidence of any interaction between different instructional settings or between these settings and gender. Note that the pre and post tests were scored out of 36. The highest gain in perceived competence in writing occurred among students in the socioconstructivist / non-blended setting (mean = 1.847).

Table III.32. The Effect of Instructional Setting on Gain in Perceived Competence in Writing

Source	SS	df	MS	F	P
Blended	26.07	1	26.07	2.29	0.134
Socioconstructivist	21.05	1	21.05	1.85	0.178
Blended x Socioconstructivist	9.78	1	9.78	0.86	0.356
Error	1034	91	11.36		
Total	1095.52	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.953	-0.821	0.603
Non-Blended	1.847	1.714	1.808
Total	1.158	0.024	0.907

Table III.33. The Effect of Instructional Setting and Gender on Gain in Perceived Competence in Writing

Source	SS	df	MS	F	P
Gender	5.81	1	5.81	0.5	0.481
Blended	26.07	1	26.07	2.23	0.139
Socioconstructivist	21.05	1	21.05	1.8	0.183
Gender x Blended	4.11	1	4.11	0.35	0.556
Gender x Socioconstructivist	4.85	1	4.85	0.42	0.519
Blended x Socioconstructivist	14.41	1	14.41	1.23	0.270
Gender x Blended x Socioconstructivist	3.45	1	3.45	0.3	0.585
Error	1015.77	87	11.68		
Total	1095.52	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.768	-1.875	0.403
Non-Blended	1.111	1.5	1.182
Total	0.859	-0.75	0.618

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.097	-0.4	0.741
Non-Blended	2.675	1.8	2.339
Total	1.413	0.333	1.118

8. Perceived Competence – Course

Although no significant difference ($p = 0.062$) was found between socioconstructivist and non-socioconstructivist instructional settings, there may have been an effect, as students in the non-socioconstructivist setting had a

slightly higher gain in their perceived competence in the course (mean = 1.095) than those in the non-socioconstructivist setting (mean = 0.365; Table III.34). The highest gain in the perceived competence in the course occurred among students in the non-socioconstructivist / blended setting (mean = 1.643). Note that the pre and post tests were scored out of 12. The small but not significant effect of socioconstructivist / non- socioconstructivist setting was also observed when gender was taken into account (p = 0.064) in addition to a small but also not significant effect of blended / non-blended setting, with students in the blended setting having a higher gain in their perceived competence in the course (p = 0.085; Table III.35). Gender itself had little effect, and there was some evidence of an interaction between blended / non-blended and socioconstructivist / non-socioconstructivist setting, but it was also not significant (p = 0.094).

Table III.34. The Effect of Instructional Setting on Gain in Perceived Competence in the Course

Source	SS	df	MS	F	P
Blended	7.54	1	7.54	3.09	0.0821
Socioconstructivist	8.73	1	8.73	3.57	0.062
Blended x Socioconstructivist	5.51	1	5.51	2.26	0.1362
Error	222.3	91	2.44		
Total	245.68	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.456	1.643	0.690
Non-Blended	0.059	0	0.042
Total	0.365	1.095	0.526

Table III.35. The Effect of Instructional Setting and Gender on Gain in Perceived Competence in the Course

Source	SS	df	MS	F	P
Gender	0.38	1	0.38	0.15	0.699
Blended	7.54	1	7.54	3.03	0.085
Socioconstructivist	8.73	1	8.73	3.51	0.064
Gender x Blended	0.58	1	0.58	0.23	0.633
Gender x Socioconstructivist	2.56	1	2.56	1.03	0.313
Blended x Socioconstructivist	7.12	1	7.12	2.86	0.094
Gender x Blended x Socioconstructivist	2.08	1	2.08	0.84	0.362
Error	216.69	87	2.49		
Total	245.68	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.68	1.75	0.828
Non-Blended	0.222	-1	0
Total	0.559	0.833	0.6

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.281	1.6	0.595
Non-Blended	-0.125	0.4	0.077
Total	0.2	1.2	0.473

9. Learning Goal – Reading

Instructional setting had no significant effect on students' learning goals in reading (Table III.36). This appeared to also be the case when gender was taken into account (Table III.37). There was also no evidence of any interaction between different instructional settings or between these settings and gender. Note that the pre and post tests were scored out of 18. The highest gain in perceived competence in writing occurred among students in the traditional non-socioconstructivist / non-blended setting (mean = 1.286).

Table III.36. The Effect of Instructional Setting on Change in Learning Goals in Reading

Source	SS	df	MS	F	P
Blended	1.25	1	1.25	0.22	0.640
Socioconstructivist	3.34	1	3.34	0.58	0.448
Blended x Socioconstructivist	7.67	1	7.67	1.34	0.250
Error	520.38	91	5.72		
Total	532.24	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.009	-0.036	-0.014
Non-Blended	-0.177	1.286	0.25
Total	-0.047	0.405	0.053

Table III.37. The Effect of Instructional Setting and Gender on Change in Learning Goals in Reading

Source	SS	df	MS	F	P
Gender	2.05	1	2.05	0.35	0.556
Blended	1.25	1	1.25	0.21	0.648
Socioconstructivist	3.34	1	3.34	0.57	0.452
Gender x Blended	4.38	1	4.38	0.75	0.389
Gender x Socioconstructivist	1.53	1	1.53	0.26	0.611
Blended x Socioconstructivist	7.27	1	7.27	1.24	0.269
Gender x Blended x Socioconstructivist	2.93	1	2.93	0.5	0.481
Error	509.49	87	5.86		
Total	532.24	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.26	0.625	0.310
Non-Blended	0	0	0
Total	0.191	0.417	0.225

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.219	-0.3	-0.238
Non-Blended	-0.375	1.8	0.462
Total	-0.25	0.4	-0.073

10. Learning Goal – Writing

Although no significant difference (p = 0.062) was found between blended and non-blended instructional settings, there may have been an effect, as students in the non-blended setting had a higher gain in their learning goals in

writing (mean = 1.625) than those in the blended setting (mean = 0.209; Table III.38). Note that the pre and post tests were scored out of 30. The highest gain in learning goals in writing occurred among students in the traditional non-socioconstructivist / non-blended setting (mean = 2.143). The small but not significant effect of blended / non-blended setting, however, was also observed when gender was taken into account (p = 0.063; Table III.39). Gender had little effect, and there was no evidence of any interaction between different instructional settings or between these settings and gender.

Table III.38. The Effect of Instructional Setting on Change in Learning Goals in Writing

Source	SS	df	MS	F	P
Blended	35.97	1	35.97	3.56	0.062
Socioconstructivist	1.73	1	1.73	0.17	0.681
Blended x Socioconstructivist	10.81	1	10.81	1.07	0.304
Error	918.67	91	10.1		
Total	968.73	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.408	-0.601	0.209
Non-Blended	1.412	2.143	1.625
Total	0.639	0.314	0.567

Table III.39. The Effect of Instructional Setting and Gender on Change in Learning Goals in Writing

Source	SS	df	MS	F	P
Gender	7.2	1	7.2	0.71	0.402
Blended	35.97	1	35.97	3.55	0.063
Socioconstructivist	1.73	1	1.73	0.17	0.681
Gender x Blended	20.73	1	20.73	2.05	0.156
Gender x Socioconstructivist	0.85	1	0.85	0.08	0.778
Blended x Socioconstructivist	12.36	1	12.36	1.22	0.272
Gender x Blended x Socioconstructivist	8.36	1	8.36	0.83	0.365
Error	881.53	87	10.13		
Total	968.73	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.76	1.396	0.848
Non-Blended	1.111	0.5	1
Total	0.853	1.097	0.890

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.133	-1.4	-0.232
Non-Blended	1.75	2.8	2.154
Total	0.456	0	0.332

11. Performance

Instructional setting had no significant effect on students' performance goals (Table III.40). This appeared to also be the case when gender was taken into account (Table III.41). However, there was evidence of significant interaction between gender, blended / non-blended, and socioconstructive / non-socioconstructive settings ($p = 0.026$). Note that the pre and post tests were scored out of 24. The highest gain in performance goals occurred among students in the traditional non-socioconstructivist / non-blended setting (mean = 1.571).

Table III.40. The Effect of Instructional Setting on Change in Students' Performance Goals

Source	SS	df	MS	F	P
Blended	1.93	1	1.93	0.2	0.656
Socioconstructivist	0	1	0	0	1
Blended x Socioconstructivist	10.93	1	10.93	1.13	0.291
Error	882.77	91	9.7		
Total	895.62	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.491	-0.071	0.380
Non-Blended	0.353	1.571	0.708
Total	0.460	0.476	0.463

Table III.41. The Effect of Instructional Setting and Gender on Students' Performance Goals

Source	SS	df	MS	F	P
Gender	5.74	1	5.74	0.61	0.437
Blended	1.93	1	1.93	0.21	0.648
Socioconstructivist	0	1	0	0	1.000
Gender x Blended	7.77	1	7.77	0.83	0.365
Gender x Socioconstructivist	8.2	1	8.2	0.88	0.351
Blended x Socioconstructivist	10.92	1	10.92	1.17	0.282
Gender x Blended x Socioconstructivist	47.78	1	47.78	5.11	0.026
Error	813.28	87	9.35		
Total	895.62	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.04	2.25	0.276
Non-Blended	0.222	-1.5	-0.091
Total	0.029	1	0.175

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.906	-1	0.452
Non-Blended	0.5	2.8	1.385
Total	0.825	0.267	0.673

12. Interest

A highly significant difference ($p < 0.0005$) was found between socioconstructive and non-socioconstructive instructional settings, with students in the non-socioconstructive setting having a higher gain in interest (mean = 2.349) than those in the socioconstructive setting (mean = -0.153; Table III.42). This effect was also observed when gender was taken into account ($p < 0.0005$); however, gender by itself had little effect (Table III.43). There was nevertheless significant interaction between gender and socioconstructivist / non-socioconstructivist setting ($p = 0.026$). Note that the pre and post tests were scored out of 28. The highest gain in interest occurred among students in the non-socioconstructivist / blended setting (mean = 2.667).

Table III.42. The Effect of Instructional Setting on Interest Gain

Source	SS	df	MS	F	P
Blended	10.01	1	10.01	1.35	0.248
Socioconstructivist	102.43	1	102.43	13.79	0.000
Blended x Socioconstructivist	14.69	1	14.69	1.98	0.163
Error	676	91	7.43		
Total	796.8	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.392	2.667	0.211
Non-Blended	0.647	1.714	0.958
Total	-0.153	2.349	0.4

Table III.43. The Effect of Instructional Setting and Gender on Interest Gain

Source	SS	df	MS	F	P
Gender	0	1	0	0	1.000
Blended	10.01	1	10.01	1.38	0.243
Socioconstructivist	102.43	1	102.43	14.15	0.000
Gender x Blended	6.36	1	6.36	0.88	0.351
Gender x Socioconstructivist	37.12	1	37.12	5.13	0.026
Blended x Socioconstructivist	8.36	1	8.36	1.15	0.287
Gender x Blended x Socioconstructivist	2.73	1	2.73	0.38	0.539
Error	629.79	87	7.24		
Total	796.8	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.133	1.833	0.368
Non-Blended	0.889	-1.5	0.455
Total	0.333	0.722	0.392

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.802	3	0.103
Non-Blended	0.375	3	1.385
Total	-0.567	3	0.406

13. Control Course

Instructional setting had no significant effect on students' perceived control with respect to meeting course objectives (Table III.44). The highest gain in perceived control in the course occurred among students in the non-

socioconstructivist / blended setting (mean = 1.429). This appeared to also be the case when gender was taken into account (Table III.45). Gender had little effect, and there was also no evidence of any interaction between different instructional settings or between these settings and gender. Note that the pre and post tests were scored out of 12.

Table III.44. The Effect of Instructional Setting on Change in Perceived Control with Respect to Meeting Course Objectives

Source	SS	df	MS	F	P
Blended	0.67	1	0.67	0.12	0.730
Socioconstructivist	3.08	1	3.08	0.54	0.464
Blended x Socioconstructivist	1.49	1	1.49	0.26	0.611
Error	517.92	91	5.69		
Total	523.44	94			

Means	*Socioconstructivist*	*Non-Socioconstructivist*	Total
Blended	0.772	1.429	0.901
Non-Blended	0.706	0.714	0.708
Total	0.757	1.191	0.853

Table III.45. The Effect of Instructional Setting and Gender on Change in Perceived Control with Respect to Meeting Course Objectives

Source	SS	df	MS	F	P
Gender	2.18	1	2.18	0.39	0.534
Blended	0.67	1	0.67	0.12	0.730
Socioconstructivist	3.08	1	3.08	0.55	0.460
Gender x Blended	10.96	1	10.96	1.97	0.164
Gender x Socioconstructivist	6.63	1	6.63	1.19	0.278
Blended x Socioconstructivist	1.77	1	1.77	0.32	0.573
Gender x Blended x Socioconstructivist	13.59	1	13.59	2.44	0.122
Error	484.56	87	5.57		
Total	523.44	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.44	0.75	0.483
Non-Blended	1.667	-1	1.182
Total	0.765	0.167	0.675

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.032	1.7	1.191

Non-Blended	-0.375	1.4	0.308
Total	0.75	1.6	0.982

14. Strategy

Instructional setting had no significant effect on students' strategies (Table III.46). The highest gain in strategy occurred among students in the traditional non-socioconstructivist / non-blended setting (mean = 2.238). This appeared to also be the case when gender was taken into account (Table III.47). There was also no evidence of any interaction between different instructional settings or between these settings and gender. Note that the pre and post tests were scored out of 60.

Table III.46. The Effect of Instructional Setting on Change in Strategy

Source	SS	df	MS	F	P
Blended	99.24	1	99.24	2.67	0.106
Socioconstructivist	4.61	1	4.61	0.12	0.730
Blended x Socioconstructivist	2.94	1	2.94	0.08	0.778
Error	3380.62	91	37.15		
Total	3483.18	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.702	-0.643	-0.690
Non-Blended	1.425	2.238	1.662
Total	-0.213	0.318	-0.096

Table III.47. The Effect of Instructional Setting and Gender on Change in Strategy

Source	SS	df	MS	F	P
Gender	4.36	1	4.36	0.11	0.741
Blended	99.24	1	99.24	2.59	0.111
Socioconstructivist	4.61	1	4.61	0.12	0.730
Gender x Blended	2.03	1	2.03	0.05	0.824
Gender x Socioconstructivist	25.99	1	25.99	0.68	0.412
Blended x Socioconstructivist	-1.29	1	-1.29	-0.03	NaN
Gender x Blended x Socioconstructivist	8.91	1	8.91	0.23	0.633
Error	3339.33	87	38.38		

Total	3483.18	94

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-1.36	1.25	-1
Non-Blended	1.124	2.5	1.374
Total	-0.703	1.667	-0.347

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.188	-1.4	-0.476
Non-Blended	1.764	2.133	1.906
Total	0.203	-0.222	0.087

15. Perseverance

A significant difference (p = 0.040) was found between blended and non-blended instructional settings, with students in the non-blended setting having a greater change in perseverance (mean = 1.417) than those in the blended setting (mean = 0.174; Table III.48). The highest gain in perseverance occurred among students in the traditional non-socioconstructivist / non-blended setting (mean = 1.857). This effect was also observed when gender was taken into account (p = 0.042); however, gender by itself had little effect (Table III.49). There was also no evidence of any interaction between different instructional settings or between these settings and gender. Note here that the pre and post tests were scored out of 24.

Table III.48. The Effect of Instructional Setting on Change in Perseverance

Source	SS	df	MS	F	P
Blended	27.71	1	27.71	4.35	0.040
Socioconstructivist	0.86	1	0.86	0.14	0.709
Blended x Socioconstructivist	2.2	1	2.2	0.35	0.556
Error	579.7	91	6.37		
Total	609.51	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.199	0.071	0.174
Non-Blended	1.235	1.857	1.417
Total	0.437	0.667	0.488

Table III.49. The Effect of Instructional Setting and Gender on Change in Perseverance

Source	SS	df	MS	F	P
Gender	8.68	1	8.68	1.34	0.250
Blended	27.71	1	27.71	4.27	0.042
Socioconstructivist	0.86	1	0.86	0.13	0.719
Gender x Blended	1.46	1	1.46	0.22	0.640
Gender x Socioconstructivist	3.03	1	3.03	0.47	0.495
Blended x Socioconstructivist	1.24	1	1.24	0.19	0.664
Gender x Blended x Socioconstructivist	1.67	1	1.67	0.26	0.611
Error	564.86	87	6.49		
Total	609.51	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.267	0	-0.230
Non-Blended	0.778	2.5	1.091
Total	0.010	0.833	0.133

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.563	0.1	0.452
Non-Blended	1.75	1.6	1.692
Total	0.8	0.6	0.746

16. Choice

A significant difference (p = 0.008) was found between blended and non-blended instructional settings, with students in the non-blended setting having a higher gain in perceived choice on participating in the course (mean = 2.264) than those in the blended setting (mean = -1.864; Table III.50). This effect was also observed when gender was taken into account (p = 0.007); gender may have also had an effect, but it was insignificant (p = 0.076; Table III.51). There was no evidence of any interaction between different instructional settings or

between these settings and gender. The highest gain in perceived choice occurred among students in the socioconstructivist / non-blended setting (mean = 2.726). Note here that the pre and post tests were scored out of 42.

Table III.50. The Effect of Instructional Setting on Change in Perceived Choice on Participating in the Course

Source	SS	df	MS	F	P
Blended	305.68	1	305.68	7.41	0.008
Socioconstructivist	3.24	1	3.24	0.08	0.778
Blended x Socioconstructivist	6.63	1	6.63	0.16	0.690
Error	3753.62	91	41.25		
Total	4075.4	94			

Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-1.752	-2.324	-1.864
Non-Blended	2.726	1.143	2.264
Total	-0.723	-1.168	-0.821

Table III.51. The Effect of Instructional Setting and Gender on Change in Perceived Choice on Participating in the Course

Source	SS	df	MS	F	P
Gender	131.37	1	131.37	3.23	0.076
Blended	305.68	1	305.68	7.52	0.007
Socioconstructivist	3.24	1	3.24	0.08	0.778
Gender x Blended	-16.63	1	-16.63	-0.41	NaN
Gender x Socioconstructivist	5.86	1	5.86	0.14	0.709
Blended x Socioconstructivist	12.86	1	12.86	0.32	0.573
Gender x Blended x Socioconstructivist	96.91	1	96.91	2.38	0.127
Error	3536.11	87	40.64		
Total	4075.4	94			

Means for Males	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.093	0.844	0.276
Non-Blended	-3.111	-0.4	-2.143
Total	-0.687	0.4	-0.388

Means for Females	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.333	1.875	0.554
Non-Blended	-2.4	-0.667	-1.75
Total	-0.138	0.786	0.042

b. The Effects of Instructional Setting, Gender, and Prior Achievement

Prior achievement, taken as students' pre test scores, was also used as the concomitant variable in the statistical analysis of the different scales on the Motivation questionnaire. Here, the change in the different scales was used as the dependent variable.

1. Pressure

Although no significant difference was found between blended and non-blended instructional settings ($p = 0.054$) when prior achievement was taken into account, there may have been an effect, with students in the non-blended setting having a larger decrease in pressure (adjusted mean = -2.131) than those in the blended setting (adjusted mean = 0.407; Table III.52). A significant difference between socioconstructive and non-socioconstructive instructional settings was observed among male participants ($p = 0.037$), with the socioconstructive setting having a more negative effect on level of pressure (adjusted mean = -1.186) than the non-socioconstructive setting (adjusted mean = 4.187, Table III.53). In contrast to the results obtained overall as well as for the male participants only, there was no observed effect of instructional setting on gain in level of pressure among female participants when taking prior achievement into account (Table III.54).

Table III.52. The Effect of Instructional Setting and Prior Achievement on Gain in Level of Pressure Experienced by Students

Source	SS	df	MS	F	P
Blended	99.55	1	99.55	3.81	0.054
Socioconstructivist	14.28	1	14.28	0.55	0.461
Blended x Socioconstructivist	18.2	1	18.2	0.7	0.405
Between Regressions	1.49	3	0.5	0.02	0.996
Remainder	2114.7	78	27.11		
Adjusted Error	2116.19	81	26.13		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.204	1.162	0.395
Non-Blended	-2.857	-0.571	-2.095
Total	-0.446	0.555	-0.213

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.218	1.161	0.407
Non-Blended	-2.878	-0.637	-2.131
Total	-0.438	0.532	-0.213

Table III.53. The Effect of Instructional Setting and Prior Achievement on Gain in Level of Pressure Experienced by Males

Source	SS	df	MS	F	P
Blended	26.89	1	26.89	1.04	0.317
Socioconstructivist	124.35	1	124.35	4.8	0.037
Blended x Socioconstructivist	21.06	1	21.06	0.81	0.376
Between Regressions	3.11	3	1.04	0.04	0.989
Remainder	721.73	25	28.87		
Adjusted Error	724.84	28	25.89		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.1	3.775	0.546
Non-Blended	-3.714	3	-2.222
Total	-1.037	3.517	-0.209

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.374	4.108	0.374
Non-Blended	-3.508	4.344	-1.763
Total	-1.186	4.187	-0.209

Table III.54. The Effect of Instructional Setting and Prior Achievement on Gain in Level of Pressure Experienced by Females

Source	SS	df	MS	F	P
Blended	52.44	1	52.44	1.98	0.166
Socioconstructivist	4.27	1	4.27	0.16	0.691
Blended x Socioconstructivist	-3.52	1	-3.52	-0.13	NaN
Between Regressions	33.87	3	11.29	0.41	0.747
Remainder	1238.59	45	27.52		
Adjusted Error	1272.47	48	26.51		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.394	0	0.307
Non-Blended	-2	-2	-2
Total	-0.036	-0.714	-0.215

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.397	0.068	0.325
Non-Blended	-2.065	-2.053	-2.06
Total	-0.045	-0.689	-0.215

2. Value – Reading

Although no significant difference in gain in the perceived value of reading was found between blended and non-blended instructional settings ($p = 0.078$) when prior achievement was taken into account, there may have been an effect, with students in the non-blended setting having a higher gain in their perceived value of reading (adjusted mean = 0.327) than those in the blended setting (adjusted mean = -0.742; Table III.55). Furthermore, although no significant interaction was found between blended / non-blended and socioconstructivist / non-socioconstructivist instructional settings ($p = 0.079$), there may have also been an effect. No significant differences were found for either males or females with respect to the effect of instructional setting on gain in perceived value of reading (Tables III.56 and III.57).

Table III.55. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of Reading

Source	SS	df	MS	F	P
Blended	17.64	1	17.64	3.19	0.078
Socioconstructivist	9.12	1	9.12	1.65	0.203
Blended x Socioconstructivist	17.58	1	17.58	3.17	0.079
Between Regressions	15.25	3	5.08	0.91	0.440
Remainder	433.41	78	5.56		
Adjusted Error	448.66	81	5.54		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.442	-2	-0.754
Non-Blended	0.191	0.714	0.365
Total	-0.308	-1.05	-0.481

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.427	-2.001	-0.742
Non-Blended	0.168	0.644	0.327
Total	-0.300	-1.075	-0.481

Table III.56. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of Reading for Males

Source	SS	df	MS	F	P
Blended	7.85	1	7.85	1.82	0.188
Socioconstructivist	1.52	1	1.52	0.35	0.559
Blended x Socioconstructivist	4.05	1	4.05	0.94	0.341
Between Regressions	15.89	3	5.3	1.26	0.310
Remainder	104.93	25	4.2		
Adjusted Error	120.82	28	4.32		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.25	-1.75	-0.5
Non-Blended	0.381	0.5	0.407
Total	-0.086	-1	-0.253

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.357	-1.620	-0.567
Non-Blended	0.462	1.026	0.587
Total	-0.145	-0.738	-0.253

Table III.57. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of Reading for Females

Source	SS	df	MS	F	P
Blended	12.14	1	12.14	1.86	0.179
Socioconstructivist	3.36	1	3.36	0.52	0.474
Blended x Socioconstructivist	13.82	1	13.82	2.12	0.152
Between Regressions	25.94	3	8.65	1.35	0.270
Remainder	287.13	45	6.38		
Adjusted Error	313.07	48	6.52		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.563	-2.111	-0.902
Non-Blended	0	0.8	0.333
Total	-0.462	-1.071	-0.623

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.559	-2.034	-0.883
Non-Blended	-0.074	0.740	0.265
Total	-0.472	-1.043	-0.623

3. Value – Writing

Overall, no significant differences in gain in perceived value of writing with respect to instructional setting and prior achievement were observed (Table III.58). A significant difference was found between socioconstructive and non-socioconstructive settings for males ($p = 0.043$), with students in the socioconstructive setting having a higher gain in their perceived value of the course (adjusted mean = 0.322) than those in the non-socioconstructive setting (adjusted mean = -1.282; Table III.59). In contrast to the results obtained for the male participants only but like the results obtained overall, there was no observed effect of instructional setting on perceived value of writing among female participants when taking prior achievement into account (Table III.60).

Table III.58. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of Writing

Source	SS	df	MS	F	P
Blended	5.24	1	5.24	1.81	0.182
Socioconstructivist	6.34	1	6.34	2.18	0.144
Blended x Socioconstructivist	1.87	1	1.87	0.64	0.426
Between Regressions	8.33	3	2.78	0.96	0.416
Remainder	226.75	78	2.91		
Adjusted Error	235.08	81	2.9		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.192	-0.539	0.046
Non-Blended	0.857	0	0.571
Total	0.333	-0.35	0.174

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.175	-0.537	0.032
Non-Blended	0.882	0.080	0.615
Total	0.325	-0.321	0.174

Table III.59. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of Writing for Males

Source	SS	df	MS	F	P
Blended	3.5	1	3.5	1.43	0.242
Socioconstructivist	11.08	1	11.08	4.52	0.043
Blended x Socioconstructivist	1.11	1	1.11	0.45	0.508
Between Regressions	4.02	3	1.34	0.52	0.672
Remainder	64.64	25	2.59		
Adjusted Error	68.66	28	2.45		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.1	-1.5	-0.167
Non-Blended	1	-1	0.556
Total	0.333	-1.333	0.030

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.079	-1.474	-0.18
Non-Blended	1.016	-0.896	0.591
Total	0.322	-1.282	0.030

Table III.60. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of Writing for Females

Source	SS	df	MS	F	P
Blended	1.82	1	1.82	0.55	0.462
Socioconstructivist	0.78	1	0.78	0.24	0.626
Blended x Socioconstructivist	0.57	1	0.57	0.17	0.682
Between Regressions	9.17	3	3.06	0.92	0.439
Remainder	148.98	45	3.31		
Adjusted Error	158.15	48	3.29		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.25	-0.111	0.171
Non-Blended	0.714	0.4	0.583
Total	0.333	0.071	0.264

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.249	-0.139	0.164
Non-Blended	0.741	0.422	0.608
Total	0.337	0.061	0.264

4. Value – Course

Overall and for males, no significant differences in gain in perceived value of the course with respect to instructional setting and prior achievement were observed (Tables III.61 and III.62). Although no significant difference in gain in perceived value of the course was also found between blended and non-blended instructional settings for females ($p = 0.065$) when prior achievement was taken into account, there may have been an effect, with students in the non-blended setting having a higher gain in their perceived value of reading (adjusted mean = 0.954) than those in the blended setting (adjusted mean = -0.694; Table III.63). Furthermore, although no significant interaction was found between blended / non-blended and socioconstructivist / non-socioconstructivist instructional settings ($p = 0.084$), there may have also been an effect.

Table III.61. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of the Course

Source	SS	df	MS	F	P
Blended	6.92	1	6.92	1.07	0.304
Socioconstructivist	2.26	1	2.26	0.35	0.556
Blended x Socioconstructivist	9.84	1	9.84	1.53	0.220
Between Regressions	5.69	3	1.9	0.29	0.833
Remainder	516.8	78	6.63		
Adjusted Error	522.49	81	6.45		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.442	-1.385	-0.631
Non-Blended	-0.071	0.714	0.191
Total	-0.364	-0.65	-0.430

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.395	-1.387	-0.594
Non-Blended	-0.138	0.502	0.076
Total	-0.341	-0.726	-0.430

Table III.62. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of the Course for Males

Source	SS	df	MS	F	P
Blended	4.75	1	4.75	0.93	0.343
Socioconstructivist	2.32	1	2.32	0.45	0.508
Blended x Socioconstructivist	5.91	1	5.91	1.16	0.291
Between Regressions	12.82	3	4.27	0.82	0.495
Remainder	130.38	25	5.22		
Adjusted Error	143.2	28	5.11		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.6	0	-0.5
Non-Blended	-0.571	-2	-0.889
Total	-0.593	-0.667	-0.606

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.380	-0.268	-0.361
Non-Blended	-0.738	-3.083	-1.259
Total	-0.473	-1.207	-0.606

Table III.63. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of the Course for Females

Source	SS	df	MS	F	P
Blended	25.05	1	25.05	3.57	0.065
Socioconstructivist	1.75	1	1.75	0.25	0.619
Blended x Socioconstructivist	21.91	1	21.91	3.12	0.084
Between Regressions	9.06	3	3.02	0.41	0.747
Remainder	327.95	45	7.29		
Adjusted Error	337.01	48	7.02		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.344	-2	-0.707
Non-Blended	0.429	1.8	1
Total	-0.205	-0.643	-0.321

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.341	-1.948	-0.694
Non-Blended	0.379	1.760	0.954
Total	-0.212	-0.624	-0.321

5. Value – Internet

Overall, for males, and for females, no significant differences in gain in the perceived value of the Internet with respect to instructional setting and prior achievement were observed (Tables III.64, III.65, and III.66).

Table III.64. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of the Internet

Source	SS	df	MS	F	P
Blended	20.85	1	20.85	1.59	0.211
Socioconstructivist	0.88	1	0.88	0.07	0.792
Blended x Socioconstructivist	1.85	1	1.85	0.14	0.709
Between Regressions	40.85	3	13.62	1.04	0.380
Remainder	1020.02	78	13.08		
Adjusted Error	1060.87	81	13.1		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.083	-0.410	-0.015
Non-Blended	1.214	0.976	1.135
Total	0.323	0.075	0.266

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.080	-0.410	-0.018
Non-Blended	1.219	0.992	1.143
Total	0.322	0.081	0.266

Table III.65. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of the Internet for Males

Source	SS	df	MS	F	P
Blended	2.2	1	2.2	0.21	0.650
Socioconstructivist	15.01	1	15.01	1.46	0.237
Blended x Socioconstructivist	5.86	1	5.86	0.57	0.457
Between Regressions	15.73	3	5.24	0.48	0.699
Remainder	272.99	25	10.92		
Adjusted Error	288.72	28	10.31		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.95	-1.583	0.528
Non-Blended	1.286	1	1.222
Total	1.037	-0.722	0.717

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.986	-1.627	0.550
Non-Blended	1.259	0.823	1.162
Total	1.057	-0.810	0.717

Table III.66. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Value of the Internet for Females

Source	SS	df	MS	F	P
Blended	17.69	1	17.69	1.15	0.289
Socioconstructivist	3.64	1	3.64	0.24	0.626
Blended x Socioconstructivist	-1.17	1	-1.17	-0.08	NaN
Between Regressions	67.58	3	22.53	1.51	0.225
Remainder	671.39	45	14.92		
Adjusted Error	738.96	48	15.4		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.458	0.111	-0.333
Non-Blended	1.143	0.967	1.069
Total	-0.171	0.417	-0.016

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.458	0.127	-0.329
Non-Blended	1.128	0.955	1.056
Total	-0.173	0.422	-0.016

6. Perceived Competence – Reading

Overall, taking prior achievement into account, there was a significant difference between blended and non-blended settings (p = 0.033), with those in the non-blended setting having a more positive change in perceived competence in reading (adjusted mean = 2.446) than those in the blended setting (adjusted mean = 0.601; Table III.67). Although there appears to be an effect of instructional setting overall, specifically when taking prior achievement into account for blended and non-blended settings, this effect, or any other, was not observed on gain in perceived competence in reading among male participants (Table III.68). In contrast, the blended setting was significantly different from the non-blended setting (p = 0.013) for female participants, with the non-blended setting having a more positive effect on gain in perceived competence in reading (adjusted mean = 3.367) than the blended setting (adjusted mean = 0.429; Table III.69).

Table III.67. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Competence in Reading

Source	SS	df	MS	F	P
Blended	52.67	1	52.67	4.69	0.033
Socioconstructivist	2.51	1	2.51	0.22	0.640
Blended x Socioconstructivist	4.49	1	4.49	0.4	0.529
Between Regressions	11.21	3	3.74	0.32	0.811
Remainder	899.13	78	11.53		
Adjusted Error	910.35	81	11.24		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.680	0.005	0.545
Non-Blended	2.714	2.429	2.619
Total	1.111	0.853	1.051

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.750	0.001	0.601
Non-Blended	2.615	2.109	2.446
Total	1.146	0.739	1.051

Table III.68. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Competence in Reading for Males

Source	SS	df	MS	F	P
Blended	0.34	1	0.34	0.04	0.843
Socioconstructivist	21.75	1	21.75	2.36	0.136
Blended x Socioconstructivist	18.72	1	18.72	2.03	0.165
Between Regressions	26.47	3	8.82	0.95	0.432
Remainder	231.48	25	9.26		
Adjusted Error	257.95	28	9.21		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.75	0.85	0.767
Non-Blended	2.286	-1	1.556
Total	1.148	0.233	0.982

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.195	0.308	1.047
Non-Blended	1.949	-3.186	0.808
Total	1.390	-0.857	0.982

Table III.69. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Competence in Reading for Females

Source	SS	df	MS	F	P
Blended	79.58	1	79.58	6.63	0.013
Socioconstructivist	0.04	1	0.04	0	1
Blended x Socioconstructivist	7.61	1	7.61	0.63	0.431
Between Regressions	17.14	3	5.71	0.46	0.712
Remainder	558.71	45	12.42		
Adjusted Error	575.84	48	12		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.635	-0.370	0.415
Non-Blended	3.143	3.8	3.417
Total	1.086	1.119	1.094

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.638	-0.314	0.429
Non-Blended	3.089	3.756	3.367
Total	1.078	1.140	1.094

7. Perceived Competence – Writing

Overall, for males, and for females, no significant differences in gain in perceived competence in writing with respect to instructional setting and prior achievement were observed (Tables III.70- III.72).

Table III.70. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Competence in Writing

Source	SS	df	MS	F	P
Blended	26.32	1	26.32	2.16	0.146
Socioconstructivist	20.19	1	20.19	1.66	0.201
Blended x Socioconstructivist	19.03	1	19.03	1.56	0.215
Between Regressions	15.68	3	5.23	0.42	0.739
Remainder	970.44	78	12.44		
Adjusted Error	986.12	81	12.17		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.929	-1.039	0.535
Non-Blended	1.814	1.714	1.781
Total	1.117	-0.075	0.840

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.911	-1.037	0.521
Non-Blended	1.84	1.797	1.826
Total	1.108	-0.045	0.840

Table III.71. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Competence in Writing for Males

Source	SS	df	MS	F	P
Blended	2.21	1	2.21	0.2	0.658
Socioconstructivist	14.52	1	14.52	1.31	0.262
Blended x Socioconstructivist	9.17	1	9.17	0.83	0.370
Between Regressions	17.74	3	5.91	0.51	0.679
Remainder	292.05	25	11.68		
Adjusted Error	309.8	28	11.06		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.66	-1.875	0.238
Non-Blended	1	1.5	1.111
Total	0.748	-0.75	0.476

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.773	-2.013	0.309
Non-Blended	0.915	0.945	0.921
Total	0.810	-1.027	0.476

Table III.72. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Competence in Writing for Females

Source	SS	df	MS	F	P
Blended	25.75	1	25.75	1.91	0.173
Socioconstructivist	14.81	1	14.81	1.1	0.300
Blended x Socioconstructivist	11.13	1	11.13	0.83	0.367
Between Regressions	36.95	3	12.32	0.91	0.444
Remainder	608.75	45	13.53		
Adjusted Error	645.71	48	13.45		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.097	-0.667	0.710
Non-Blended	2.629	1.8	2.283
Total	1.372	0.214	1.066

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.093	-0.752	0.688
Non-Blended	2.710	1.867	2.359
Total	1.383	0.183	1.066

8. Perceived Competence – Course

Overall, taking prior achievement into account, there was a significant difference between blended and non-blended settings (p = 0.028), with those in the blended setting having a more positive change in perceived competence in the course (adjusted mean = 0.723) than those in the non-blended setting (adjusted mean = -0.144; Table III.73). Similarly, the blended setting was significantly different from the non-blended setting (p = 0.003) for male

participants, with the blended setting having a more positive effect on gain in perceived competence in the course (adjusted mean = 1.042) than the non-blended setting (adjusted mean = -0.222; Table III.74). Furthermore, although no significant interaction was found between blended / non-blended and socioconstructivist / non-socioconstructivist instructional settings (p = 0.093), there may have also been an effect. Although there appears to be an effect of instructional setting overall and for males, specifically when taking prior achievement into account for blended and non-blended settings, this effect, or any other, was not observed on gain in perceived competence in the course among female participants (Table III.75).

Table III.73. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Competence in the Course

Source	SS	df	MS	F	P
Blended	11.62	1	11.62	5.02	0.028
Socioconstructivist	4.26	1	4.26	1.84	0.179
Blended x Socioconstructivist	4.55	1	4.55	1.97	0.164
Between Regressions	7.43	3	2.48	1.07	0.367
Remainder	180.05	78	2.31		
Adjusted Error	187.48	81	2.31		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.519	1.462	0.708
Non-Blended	-0.143	0	-0.095
Total	0.379	0.95	0.512

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.539	1.460	0.723
Non-Blended	-0.171	-0.090	-0.144
Total	0.389	0.918	0.512

Table III.74. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Competence in the Course for Males

Source	SS	df	MS	F	P
Blended	16.8	1	16.8	10.71	0.003
Socioconstructivist	0.63	1	0.63	0.4	0.532
Blended x Socioconstructivist	4.75	1	4.75	3.03	0.093
Between Regressions	7.12	3	2.37	1.61	0.212
Remainder	36.79	25	1.47		
Adjusted Error	43.9	28	1.57		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.9	1.75	1.042
Non-Blended	0	-1	-0.222
Total	0.667	0.833	0.697

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.084	1.526	1.157
Non-Blended	-0.139	-1.903	-0.531
Total	0.767	0.383	0.697

Table III.75. The Effect of Instructional Setting and Prior Achievement on Gain in Perceived Competence in the Course for Females

Source	SS	df	MS	F	P
Blended	2.55	1	2.55	0.96	0.332
Socioconstructivist	7.02	1	7.02	2.66	0.109
Blended x Socioconstructivist	2.28	1	2.28	0.86	0.358
Between Regressions	5.81	3	1.94	0.72	0.545
Remainder	121.05	45	2.69		
Adjusted Error	126.86	48	2.64		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.281	1.333	0.512
Non-Blended	-0.286	0.4	0
Total	0.180	1	0.396

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.282	1.345	0.515
Non-Blended	-0.297	0.391	-0.010
Total	0.178	1.004	0.396

9. Learning Goal – Reading

Overall, for males, and for females, no significant differences in change in learning goals in reading with respect to instructional setting and prior achievement were observed (Tables III.76- III.78).

Table III.76. The Effect of Instructional Setting and Prior Achievement on Change in Learning Goals in Reading

Source	SS	df	MS	F	P
Blended	7.97	1	7.97	1.43	0.235
Socioconstructivist	3.45	1	3.45	0.62	0.433
Blended x Socioconstructivist	1.28	1	1.28	0.23	0.633
Between Regressions	4.18	3	1.39	0.24	0.868
Remainder	446.96	78	5.73		
Adjusted Error	451.14	81	5.57		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.25	-0.115	-0.223
Non-Blended	0.214	1.286	0.571
Total	-0.152	0.375	-0.029

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.226	-0.117	-0.204
Non-Blended	0.181	1.179	0.514
Total	-0.140	0.337	-0.029

Table III.77. The Effect of Instructional Setting and Prior Achievement on Change in Learning Goals in Reading for Males

Source	SS	df	MS	F	P
Blended	1.1	1	1.1	0.14	0.711
Socioconstructivist	0.35	1	0.35	0.04	0.843
Blended x Socioconstructivist	2.68	1	2.68	0.33	0.570
Between Regressions	0.15	3	0.05	0.01	0.999
Remainder	227.97	25	9.12		
Adjusted Error	228.13	28	8.15		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.3	0.625	-0.146
Non-Blended	0.571	0	0.444
Total	-0.074	0.417	0.015

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.232	0.5417	-0.103
Non-Blended	0.520	-0.336	0.330
Total	-0.037	0.249	0.015

Table III.78. The Effect of Instructional Setting and Prior Achievement on Change in Learning Goals in Reading for Females

Source	SS	df	MS	F	P
Blended	7.26	1	7.26	1.64	0.207
Socioconstructivist	3.5	1	3.5	0.79	0.379
Blended x Socioconstructivist	7.83	1	7.83	1.77	0.190
Between Regressions	11.66	3	3.89	0.87	0.464
Remainder	200.64	45	4.46		
Adjusted Error	212.3	48	4.42		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.219	-0.444	-0.268
Non-Blended	-0.143	1.8	0.667
Total	-0.205	0.357	-0.057

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.217	-0.403	-0.258
Non-Blended	-0.183	1.768	0.630
Total	-0.211	0.372	-0.057

10. Learning Goal – Writing

Although no significant difference in gain in change in learning goals in writing was found between blended and non-blended instructional settings (p = 0.066) when prior achievement was taken into account, there may have been an effect, with students in the non-blended setting having a higher gain in their learning goals in writing (adjusted mean = 1.69) than those in the blended setting (adjusted mean = 0.175; Table III.79). Taking prior achievement into account, no significant differences were found for males with respect to the effect of instructional setting on change in learning (Table III.80). In contrast, the blended

setting was significantly different from the non-blended setting (p = 0.018) for female participants, with the non-blended setting having a more positive effect on change in learning goals in writing (adjusted mean = 2.113) than the blended setting (adjusted mean = -0.320; Table III.81). Furthermore, although there was no significant interaction between blended / non-blended and socioconstructivist / non-socioconstructivist settings (p = 0.080), there may have been an effect.

Table III.79. The Effect of Instructional Setting and Prior Achievement on Change in Learning Goals in Writing

Source	SS	df	MS	F	P
Blended	35.5	1	35.5	3.48	0.066
Socioconstructivist	5.53	1	5.53	0.54	0.465
Blended x Socioconstructivist	16.27	1	16.27	1.59	0.211
Between Regressions	3.78	3	1.26	0.12	0.948
Remainder	822.96	78	10.55		
Adjusted Error	826.74	81	10.21		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.428	-0.955	0.151
Non-Blended	1.571	2.143	1.762
Total	0.671	0.129	0.545

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.457	-0.957	0.175
Non-Blended	1.53	2.010	1.69
Total	0.685	0.082	0.545

Table III.80. The Effect of Instructional Setting and Prior Achievement on Change in Learning Goals in Writing for Males

Source	SS	df	MS	F	P
Blended	0	1	0	0	1
Socioconstructivist	0.2	1	0.2	0.02	0.889
Blended x Socioconstructivist	2.69	1	2.69	0.22	0.643
Between Regressions	9.18	3	3.06	0.23	0.875
Remainder	329.58	25	13.18		
Adjusted Error	338.77	28	12.1		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.9	1.396	0.983
Non-Blended	1.429	0.5	1.222
Total	1.037	1.097	1.048

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.991	1.285	1.040
Non-Blended	1.360	0.051	1.069
Total	1.087	0.874	1.048

Table III.81. The Effect of Instructional Setting and Prior Achievement on Change in Learning Goals in Writing for Females

Source	SS	df	MS	F	P
Blended	54.56	1	54.56	5.99	0.018
Socioconstructivist	4.65	1	4.65	0.51	0.477
Blended x Socioconstructivist	29.04	1	29.04	3.19	0.080
Between Regressions	36.36	3	12.12	1.36	0.267
Remainder	400.84	45	8.91		
Adjusted Error	437.2	48	9.11		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.133	-2	-0.335
Non-Blended	1.714	2.8	2.167
Total	0.417	-0.286	0.231

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.136	-1.939	-0.320
Non-Blended	1.656	2.753	2.113
Total	0.408	-0.264	0.231

11. Performance

Overall, for males, and for females, no significant differences in change in students' performance goals with respect to instructional setting and prior achievement were observed (Tables III.82- III.84). Although no significant interaction was observed between blended / non-blended and socioconstructive / non-socioconstructive instructional settings with respect to change in performance goals ($p = 0.07$), there may have been an effect for male

participants (Table III.83). Similarly, for female participants, although no significant interaction was observed between blended / non-blended and socioconstructive / non-socioconstructive instructional settings with respect to change in performance goals ($p = 0.079$), there may have also been an effect (Table III.84).

Table III.82. The Effect of Instructional Setting and Prior Achievement on Change in Students' Performance Goals

Source	SS	df	MS	F	P
Blended	1.89	1	1.89	0.19	0.664
Socioconstructivist	1.05	1	1.05	0.11	0.741
Blended x Socioconstructivist	8.76	1	8.76	0.89	0.348
Between Regressions	10.55	3	3.52	0.35	0.789
Remainder	784.5	78	10.06		
Adjusted Error	795.04	81	9.82		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.615	-0.154	0.462
Non-Blended	0.643	1.571	0.952
Total	0.621	0.45	0.581

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.659	-0.156	0.496
Non-Blended	0.581	1.374	0.846
Total	0.643	0.379	0.581

Table III.83. The Effect of Instructional Setting and Prior Achievement on Change in Males' Performance Goals

Source	SS	df	MS	F	P
Blended	1.87	1	1.87	0.34	0.565
Socioconstructivist	1.14	1	1.14	0.21	0.650
Blended x Socioconstructivist	19.76	1	19.76	3.55	0.07
Between Regressions	19.53	3	6.51	1.19	0.334
Remainder	136.2	25	5.45		
Adjusted Error	155.73	28	5.56		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.15	2.25	0.5
Non-Blended	0.571	-1.5	0.111
Total	0.259	1	0.394

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.225	2.158	0.547
Non-Blended	0.515	-1.870	-0.015
Total	0.300	0.816	0.394

Table III.84. The Effect of Instructional Setting and Prior Achievement on Change in Females' Performance Goals

Source	SS	df	MS	F	P
Blended	10.29	1	10.29	0.86	0.359
Socioconstructivist	3.94	1	3.94	0.33	0.568
Blended x Socioconstructivist	38.52	1	38.52	3.23	0.079
Between Regressions	16.5	3	5.5	0.45	0.719
Remainder	555.52	45	12.34		
Adjusted Error	572.02	48	11.92		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.906	-1.222	0.439
Non-Blended	0.714	2.8	1.583
Total	0.872	0.214	0.698

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.91	-1.145	0.459
Non-Blended	0.641	2.740	1.515
Total	0.862	0.243	0.698

12. Interest

Overall, taking prior achievement into account, there was a significant difference between socioconstructivist and non-socioconstructivist settings (p = 0.001), with those in the non-socioconstructivist setting having a higher gain in interest (adjusted mean = 2.314) than those in the socioconstructivist setting (adjusted mean = -0.141; Table III.85). Although there appears to be an effect of instructional setting overall, specifically when taking prior achievement into account for socioconstructive and non- socioconstructive settings, this effect, or any other, was not observed on gain in interest among male participants (Table

III.86). In contrast, the socioconstructivist setting was significantly different from the non-socioconstructivist setting ($p < 0.0005$) for female participants, with the non-socioconstructive setting having a more positive effect on interest gain (adjusted mean = 3.111) than the socioconstructivist setting (adjusted mean = -0.596; Table III.87).

Table III.85. The Effect of Instructional Setting and Prior Achievement on Interest Gain

Source	SS	df	MS	F	P
Blended	7.83	1	7.83	1.01	0.318
Socioconstructivist	91.48	1	91.48	11.79	0.001
Blended x Socioconstructivist	9.43	1	9.43	1.21	0.275
Between Regressions	20.57	3	6.86	0.88	0.455
Remainder	608.15	78	7.8		
Adjusted Error	628.72	81	7.76		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.391	2.718	0.231
Non-Blended	0.714	1.714	1.048
Total	-0.157	2.367	0.430

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.359	2.716	0.256
Non-Blended	0.669	1.567	0.968
Total	-0.141	2.314	0.430

Table III.86. The Effect of Instructional Setting and Prior Achievement on Interest Gain for Males

Source	SS	df	MS	F	P
Blended	0.29	1	0.29	0.04	0.843
Socioconstructivist	0.03	1	0.03	0	1
Blended x Socioconstructivist	18.34	1	18.34	2.6	0.118
Between Regressions	10.81	3	3.6	0.48	0.699
Remainder	186.6	25	7.46		
Adjusted Error	197.41	28	7.05		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.267	1.833	0.528
Non-Blended	1	-1.5	0.444
Total	0.457	0.722	0.505

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.326	1.761	0.565
Non-Blended	0.955	-1.792	0.345
Total	0.489	0.577	0.505

Table III.87. The Effect of Instructional Setting and Prior Achievement on Interest Gain for Females

Source	SS	df	MS	F	P
Blended	16.05	1	16.05	2.1	0.154
Socioconstructivist	141.33	1	141.33	18.47	0.000
Blended x Socioconstructivist	-8.68	1	-8.68	-1.13	NaN
Between Regressions	22.99	3	7.66	1	0.402
Remainder	344.37	45	7.65		
Adjusted Error	367.36	48	7.65		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.802	3.111	0.057
Non-Blended	0.429	3	1.5
Total	-0.581	3.071	0.384

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.797	3.220	0.085
Non-Blended	0.325	2.915	1.404
Total	-0.596	3.111	0.385

13. Control Course

Overall, for males, and for females, no significant differences in change in perceived control with respect to meeting course objectives, relating to instructional setting and prior achievement, were observed (Tables III.88- III.90). Although no significant differences were found between regressions ($p = 0.073$), there may have been an effect among female participants (Table III.90).

Table III.88. The Effect of Instructional Setting and Prior Achievement on Change in Perceived Control with Respect to Meeting Course Objectives

Source	SS	df	MS	F	P
Blended	2.21	1	2.21	0.39	0.534
Socioconstructivist	1.82	1	1.82	0.32	0.573
Blended x Socioconstructivist	2.1	1	2.1	0.37	0.545
Between Regressions	30.67	3	10.22	1.83	0.149
Remainder	434.58	78	5.57		
Adjusted Error	465.25	81	5.74		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.904	1.539	1.031
Non-Blended	0.714	0.714	0.714
Total	0.864	1.25	0.954

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.923	1.537	1.046
Non-Blended	0.687	0.628	0.668
Total	0.873	1.219	0.954

Table III.89. The Effect of Instructional Setting and Prior Achievement on Change in Perceived Control with Respect to Meeting Course Objectives for Males

Source	SS	df	MS	F	P
Blended	0.04	1	0.04	0.01	0.921
Socioconstructivist	3.08	1	3.08	0.53	0.473
Blended x Socioconstructivist	6.94	1	6.94	1.19	0.285
Between Regressions	4.32	3	1.44	0.23	0.875
Remainder	159.31	25	6.37		
Adjusted Error	163.63	28	5.84		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.7	0.75	0.708
Non-Blended	1.429	-1	0.889
Total	0.889	0.167	0.757

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.741	0.700	0.734
Non-Blended	1.397	-1.203	0.820
Total	0.911	0.065	0.758

Table III.90. The Effect of Instructional Setting and Prior Achievement on Change in Perceived Control with Respect to Meeting Course Objectives for Females

Source	SS	df	MS	F	P
Blended	4.34	1	4.34	0.75	0.391
Socioconstructivist	8.15	1	8.15	1.4	0.243
Blended x Socioconstructivist	3.3	1	3.3	0.57	0.454
Between Regressions	39.7	3	13.23	2.48	0.073
Remainder	239.96	45	5.33		
Adjusted Error	279.66	48	5.83		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.031	1.889	1.220
Non-Blended	0	1.4	0.583
Total	0.846	1.714	1.076

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	1.033	1.933	1.231
Non-Blended	-0.042	1.366	0.545
Total	0.840	1.730	1.076

14. Strategy

Overall, for males, and for females, no significant differences in change in strategy, with respect to instructional setting and prior achievement, were observed (Tables III.91- III.93). Although no significant differences were found between regressions ($p = 0.0945$), there may have been an effect overall (Table III.91).

Table III.91. The Effect of Instructional Setting and Prior Achievement on Change in Strategy

Source	SS	df	MS	F	P
Blended	73.53	1	73.53	2.09	0.152
Socioconstructivist	0.61	1	0.61	0.02	0.888
Blended x Socioconstructivist	-0.05	1	-0.05	0	1
Between Regressions	222.53	3	74.18	2.2	0.0945
Remainder	2626.55	78	33.67		
Adjusted Error	2849.09	81	35.17		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.404	-0.539	-0.431
Non-Blended	1.865	2.238	1.989
Total	0.077	0.433	0.160

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.330	-0.543	-0.372
Non-Blended	1.761	1.904	1.809
Total	0.114	0.314	0.160

Table III.92. The Effect of Instructional Setting and Prior Achievement on Change in Strategy for Males

Source	SS	df	MS	F	P
Blended	20.25	1	20.25	0.42	0.522
Socioconstructivist	12.97	1	12.97	0.27	0.607
Blended x Socioconstructivist	-1.45	1	-1.45	-0.03	NaN
Between Regressions	265.56	3	88.52	2.03	0.135
Remainder	1088.04	25	43.52		
Adjusted Error	1353.6	28	48.34		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.75	1.25	-0.417
Non-Blended	1.286	2.5	1.556
Total	-0.222	1.667	0.121

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.699	1.188	-0.384
Non-Blended	1.247	2.248	1.469
Total	-0.194	1.541	0.121

Table III.93. The Effect of Instructional Setting and Prior Achievement on Change in Strategy for Females

Source	SS	df	MS	F	P
Blended	62.16	1	62.16	2.03	0.161
Socioconstructivist	1	1	1	0.03	0.863
Blended x Socioconstructivist	6.45	1	6.45	0.21	0.649
Between Regressions	23.3	3	7.77	0.24	0.868
Remainder	1444.75	45	32.11		
Adjusted Error	1468.05	48	30.58		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.188	-1.333	-0.439
Non-Blended	2.444	2.133	2.315
Total	0.285	-0.095	0.185

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.181	-1.195	-0.403
Non-Blended	2.313	2.026	2.193
Total	0.267	-0.045	0.185

15. Perseverance

Overall, taking prior achievement into account, there was a significant difference between blended and non-blended settings (p = 0.045), with those in the non-blended setting having a more positive change in perseverance (adjusted mean = 1.519) than those in the blended setting (adjusted mean = 0.161; Table III.94). This difference was not significant for male participants (p = 0.056), but there may have been an effect (Table III.95). No effect of instructional setting was observed on change in perseverance for female participants; however, although not significant, there may have been an effect between regressions (p = 0.065; Table III.96).

Table III.94. The Effect of Instructional Setting and Prior Achievement on Change in Perseverance

Source	SS	df	MS	F	P
Blended	28.53	1	28.53	4.15	0.045
Socioconstructivist	0.39	1	0.39	0.06	0.807
Blended x Socioconstructivist	0.64	1	0.64	0.09	0.765
Between Regressions	31.92	3	10.64	1.58	0.201
Remainder	524.93	78	6.73		
Adjusted Error	556.84	81	6.87		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.180	0	0.144
Non-Blended	1.429	1.857	1.571
Total	0.444	0.65	0.492

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.201	-0.001	0.161
Non-Blended	1.398	1.76	1.519
Total	0.455	0.615	0.492

Table III.95. The Effect of Instructional Setting and Prior Achievement on Change in Perseverance for Males

Source	SS	df	MS	F	P
Blended	23.33	1	23.33	3.97	0.056
Socioconstructivist	7.04	1	7.04	1.2	0.283
Blended x Socioconstructivist	0.12	1	0.12	0.02	0.889
Between Regressions	5.01	3	1.67	0.26	0.854
Remainder	159.69	25	6.39		
Adjusted Error	164.7	28	5.88		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.433	0	-0.361
Non-Blended	1	2.5	1.333
Total	-0.062	0.833	0.101

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-0.561	0.156	-0.442
Non-Blended	1.097	3.128	1.548
Total	-0.131	1.147	0.101

Table III.96. The Effect of Instructional Setting and Prior Achievement on Change in Perseverance for Females

Source	SS	df	MS	F	P
Blended	14.18	1	14.18	1.85	0.180
Socioconstructivist	0.38	1	0.38	0.05	0.824
Blended x Socioconstructivist	1.57	1	1.57	0.21	0.649
Between Regressions	53.84	3	17.95	2.58	0.065
Remainder	313.33	45	6.96		
Adjusted Error	367.17	48	7.65		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.563	0	0.439
Non-Blended	1.857	1.6	1.75
Total	0.795	0.571	0.736

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.566	0.062	0.455
Non-Blended	1.798	1.552	1.695
Total	0.787	0.594	0.736

16. Choice

Overall, taking prior achievement into account, there was a significant difference between blended and non-blended instructional settings ($p = 0.029$), with those in the non-blended setting having a more positive change in perceived choice on participating in the course (adjusted mean = 2.085) than those in the blended setting (adjusted mean = -1.628; Table III.97). Neither this effect, nor any others were observed among male participants (Table III.98). No significant differences were also found among female participants; however, there may have been an effect of blended / non-blended instructional setting on change in perceived choice on participating in the course ($p = 0.079$; Table III.99).

Table III.97. The Effect of Instructional Setting and Prior Achievement on Change in Perceived Choice on Participating in the Course

Source	SS	df	MS	F	P
Blended	213.06	1	213.06	4.94	0.029
Socioconstructivist	1.67	1	1.67	0.04	0.842
Blended x Socioconstructivist	13.28	1	13.28	0.31	0.579
Between Regressions	32.48	3	10.83	0.24	0.868
Remainder	3458.76	78	44.34		
Adjusted Error	3491.24	81	43.1		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-1.555	-2.041	-1.652
Non-Blended	2.667	1.143	2.159
Total	-0.659	-0.927	-0.721

Adjusted Means	*Socioconstructivist*	*Non-Socioconstructivist*	Total
Blended	-1.524	-2.043	-1.628
Non-Blended	2.624	1.006	2.085
Total	-0.644	-0.976	-0.721

Table III.98. The Effect of Instructional Setting and Prior Achievement on Change in Perceived Choice on Participating in the Course for Males

Source	SS	df	MS	F	P
Blended	57.1	1	57.1	1.17	0.289
Socioconstructivist	0.05	1	0.05	0	1
Blended x Socioconstructivist	59.09	1	59.09	1.21	0.281
Between Regressions	227.43	3	75.81	1.66	0.201
Remainder	1142.31	25	45.69		
Adjusted Error	1369.74	28	48.92		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.475	-1.8	0.096
Non-Blended	2.429	8	3.667
Total	0.982	1.467	1.070

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	0.673	-2.042	0.221
Non-Blended	2.279	7.026	3.334
Total	1.089	0.981	1.070

Table III.99. The Effect of Instructional Setting and Prior Achievement on Change in Perceived Choice on Participating in the Course for Females

Source	SS	df	MS	F	P
Blended	123.76	1	123.76	3.22	0.079
Socioconstructivist	0.2	1	0.2	0.01	0.921
Blended x Socioconstructivist	62.33	1	62.33	1.62	0.209
Between Regressions	31.86	3	10.62	0.26	0.854
Remainder	1814.32	45	40.32		
Adjusted Error	1846.18	48	38.46		

Observed Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-2.823	-2.148	-2.675
Non-Blended	2.905	-1.6	1.028
Total	-1.795	-1.952	-1.837

Adjusted Means	Socioconstructivist	Non-Socioconstructivist	Total
Blended	-2.821	-2.114	-2.666
Non-Blended	2.872	-1.627	0.998
Total	-1.799	-1.940	-1.837

C. Setting IV: Blended Socioconstructivist Online Learning

The blended socioconstructivist setting (Setting IV) was analyzed separately to determine the relationships between different variables and online participation by students and achievement. These relationships were assessed using either chi-square tests or the Fisher Exact Probability test, which was used when sample sized were too small for the chi-square test.

a. Online Participation by Students

Chi-square or Fisher Exact Probability tests were run to assess the relationship between online participation by students and gender, level of teacher online activity, student feedback, prior achievement, persistence, and the teacher's attitude toward online learning. The online participation of each student was categorized into three categories based on the maximum number of posts made by a single student on an online discussion board without including outliers: complete, which was 80% or more of the maximum; partial, which was 50% to 80%; and fail, which was less than 50%.

1. Gender

In a comparison of student online participation and gender using a chi-square test, student online participation was found to be independent of gender (Table III.100).

Table III.100. The Relationship between Online Participation and Gender

All students	Complete	Partial	Fail	**Total**
Male	23	17	25	72
Female	28	25	19	65
Total	51	42	44	137

Chi-Square	df	P
2.48	2	0.289

2. Level of teacher online activity

In a comparison of student online participation and teacher online participation using a chi-square test, in which teachers were grouped according to whether they were very active, sometimes active or medium, or not very active, student online participation was found to be independent of teacher online participation (Table III.101). A similar comparison was made for only male participants in a Fisher Exact Probability Test, and in this case, a significant association was found between student online participation and teacher online participation (p_A = 0.022; p_B = 0.022; Table III.102). In contrast, student online participation for female participants was found to be independent of teacher online participation (Table III.103).

Table III.101. The Relationship between Online Participation and Teacher Online Participation

All students	Complete	Partial	Fail	**Total**
Very active	11	8	2	21
Medium	31	24	29	84
Not very active	9	10	13	32
Total	51	42	44	137

Chi-Square	df	P
6.72	4	0.151

Table III.102. The Relationship between Online Participation and Teacher Online Participation for Males

Males	Complete	Partial	Fail	**Total**
Very active	7	4	2	13
Medium	15	8	13	36
Not very active	1	5	10	16
Total	23	17	25	65

Fisher Exact Probability Test	
P_A	0.022
P_B	0.022

Table III.103. The Relationship between Online Participation and Teacher Online Participation for Females

Females	Complete	Partial	Fail	**Total**
Very active	4	4	0	8
Medium	16	16	16	48
Not very active	8	5	3	16
Total	28	25	19	72

Fisher Exact Probability Test	
P_A	0.265
P_B	0.265

3. Student feedback

When student online participation and student feedback were compared using the Fisher Exact Probability Test, student feedback was found to be independent of student online participation (Table III.104). A similar comparison was made for only male participants, and in this case, a significant association

was found between student online participation and student feedback (p_A = 0.025; p_B = 0.020; Table III.105). In contrast, student feedback for female participants was found to be independent of student online participation (Table III.106). Student feedback was classified according to whether individual answers were positive, quasi, or negative on a feedback questionnaire.

Table III.104. The Relationship between Online Participation and Student Feedback

All students	Complete	Partial	Fail	**Total**
Positive	20	14	3	37
Quasi	6	4	1	11
Negative	2	3	4	9
Total	28	21	8	57

Fisher Exact Probability Test	
P_A	0.113
P_B	0.113

Table III.105. The Relationship between Online Participation and Student Feedback for Males

Males	Complete	Partial	Fail	**Total**
Positive	9	7	2	18
Quasi	1	2	1	4
Negative	0	0	3	3
Total	10	9	6	25

Fisher Exact Probability Test	
P_A	0.025
P_B	0.020

Table III.106. The Relationship between Online Participation and Student Feedback for Females

Females	Complete	Partial	Fail	**Total**
Positive	11	7	1	19
Quasi	5	2	0	7
Negative	2	3	1	6
Total	18	12	2	32

Fisher Exact Probability Test	
P_A	0.628
P_B	0.628

However, when student online participation and student feedback are compared for a teacher who is very active online, student feedback is significantly associated with student online participation (p_A = 0.002; p_B = 0.002; Table III.107). When there is medium teacher online activity, student feedback is independent of student online participation (Table III.108). Student feedback is also independent of student online participation when the teacher is not very active online (Table III.109).

Table III.107. The Relationship between Online Participation and Student Feedback – High Teacher Online Activity

All students	Complete	Partial	Fail	**Total**
Positive	9	3	0	12
Quasi	0	1	1	2
Negative	0	3	0	3
Total	9	7	1	17

Fisher Exact Probability Test	
P_A	0.002
P_B	0.002

Table III.108. The Relationship between Online Participation and Student Feedback – Medium Teacher Online Activity

All students	Complete	Partial	Fail	**Total**
Positive	9	10	3	22
Quasi	5	3	0	8
Negative	2	0	2	4
Total	16	13	5	34

Fisher Exact Probability Test	
P_A	0.176
P_B	0.173

Table III.109. The Relationship between Online Participation and Student Feedback – Low Teacher Online Activity

All students	Complete	Partial	Fail	**Total**
Positive	3	4	2	9
Quasi	1	1	2	4
Negative	0	0	2	2
Total	4	5	6	15

Fisher Exact Probability Test	
P_A	0.532
P_B	0.460

4. Prior achievement

Online participation was found to be independent of prior achievement overall, for males, and for females (Tables III.110-III.112). Prior achievement was divided into three categories based on the students' scores on the pretest: strong, which is a score from 9.5 to 12; medium, which is a score from 7 to 9; and weak, which is a score less than 6.5.

Table III.110. The Relationship between Online Participation and Prior Achievement

All students	Complete	Partial	Fail	**Total**
Strong	5	1	1	7
Medium	11	11	5	27
Weak	15	11	4	30
Total	31	23	10	64

Fisher Exact Probability Test	
P_A	0.670
P_B	0.670

Table III.111. The Relationship between Online Participation and Prior Achievement for Males

Males	Complete	Partial	Fail	**Total**
Strong	3	0	0	3
Medium	2	5	4	11
Weak	5	4	2	11
Total	10	9	6	25

Fisher Exact Probability Test	
P_A	0.166
P_B	0.145

Table III.112. The Relationship between Online Participation and Prior Achievement for Females

Females	Complete	Partial	Fail	**Total**
Strong	2	1	1	4
Medium	9	6	1	16
Weak	10	7	2	19
Total	21	14	4	39

Fisher Exact Probability Test	
P_A	0.848
P_B	0.832

5. Persistence

Online participation and in-class persistence were found to be very related ($p = 0.004$), especially for females ($p_A = 0.002$, $p_B = 0.002$), but not for males (Tables III.113-III.15). Students who had dropped the course were not included in the analysis, as their online participation would be minimal and as such would affect the results.

Table III.113. The Relationship between Online Participation and Persistence

All students	Complete	Partial	Fail	**Total**
Good	41	31	17	89
Medium	6	7	11	24
Poor	1	3	7	11
Total	48	41	35	124

Chi-Square	df	P
15.36	4	0.004

Table III.114. The Relationship between Online Participation and Persistence for Males

Males	Complete	Partial	Fail	**Total**
Good	15	11	9	35

Medium	4	3	7	14
Poor	1	3	4	8
Total	20	17	20	57

Fisher Exact Probability Test	
P_A	0.316
P_B	0.317

Table III.115. The Relationship between Online Participation and Persistence for Females

Females	Complete	Partial	Fail	**Total**
Good	26	20	8	54
Medium	1	4	4	9
Poor	0	0	3	3
Total	27	24	15	66

Fisher Exact Probability Test	
P_A	0.002
P_B	0.002

6. Teacher attitude

Online participation was found to be independent of the teacher's attitude towards online learning overall and for both males and females (Tables III.116-III.118). The attitude of the teacher was grouped into three categories depending on the teacher's responses to a feedback questionnaire, which could be positive, quasi, or negative.

Table III.116. The Relationship between Online Participation and Teacher Attitude towards Online Learning

All students	Complete	Partial	Fail	**Total**
Positive	20	18	21	59
Quasi	24	19	15	58
Negative	5	5	8	18
Total	49	42	44	135

Chi-Square	df	P
2.73	4	0.604

Table III.117. The Relationship between Online Participation and Teacher Attitude towards Online Learning for Males

Males	Complete	Partial	Fail	**Total**
Positive	13	7	10	30
Quasi	6	8	5	19
Negative	1	2	6	9
Total	20	17	21	58

Fisher Exact Probability Test	
P_A	0.192
P_B	0.191

Table III.118. The Relationship between Online Participation and Teacher Attitude towards Online Learning for Females

Females	Complete	Partial	Fail	**Total**
Positive	6	11	11	28
Quasi	18	11	6	35
Negative	4	3	2	9
Total	28	25	19	72

Fisher Exact Probability Test	
P_A	0.128
P_B	0.128

b. Achievement

Chi-square and Fisher Exact Probability tests were run to analyze the relationships between achievement and gender and online participation for students in the blended socioconstructive setting (Setting IV). Final achievement and achievement gain looked at. Final achievement was divided into three categories based on the results from the posttests, which were scored on 12: strong, with a posttest score between 9.5 and 12; medium, with a posttest score between 7 and 9; or weak, with a posttest score less than 6.5. Achievement gain was divided into three categories based on the difference between posttest and

pretest scores: positive, with a difference of 1 or greater; no change, with a difference between 0.5 and -0.5; or negative, with a difference of -1 or less.

1. Gender

No significant relationship was found between gender and final achievement for the blended socioconstructive setting (Table III.119).

Table III.119. The Relationship between Gender and Final Achievement

All students	Strong	Medium	Weak	**Total**
Male	6	15	4	25
Female	8	19	5	32
Total	14	34	9	57

Chi-Square	df	P
0.01	2	0.995

2. Online participation

Achievement gain

Achievement gain was found to be independent of online participation overall and for males (Tables III.120 and III.121), but not for females (p_A = 0.019, p_B = 0.018, Table III.122).

Table III.120. The Relationship between Online Participation and Achievement Gain

All students	Complete	Partial	Fail	**Total**
Positive	21	14	4	39
No change	5	4	2	11
Negative	4	3	2	9
Total	30	21	8	59

Fisher Exact Probability Test	
P_A	0.835
P_B	0.841

Table III.121. The Relationship between Online Participation and Achievement Gain for Males

Males	Complete	Partial	Fail	**Total**
Positive	4	6	4	14
No change	4	1	0	5
Negative	2	1	1	4
Total	10	8	5	23

Fisher Exact Probability Test	
P_A	0.412
P_B	0.412

Table III.122. The Relationship between Online Participation and Achievement Gain for Females

Females	Complete	Partial	Fail	**Total**
Positive	17	8	0	25
No change	1	3	2	6
Negative	2	2	1	5
Total	20	13	3	36

Fisher Exact Probability Test	
P_A	0.019
P_B	0.018

Final achievement

However, final achievement was found to be strongly related to online participation (p = 0.006, Table III.123), especially for females (p_A = 0.0010, p_B = 0.0010, Table III.125) but not for males (Table III.124).

Table III.123. Online participation and final performance

All students	Complete	Partial	Fail	**Total**
Strong	18	4	3	25
Medium	13	15	4	32
Weak	3	5	6	14
Total	34	24	13	71

Fisher Exact Probability Test	
P_A	0.006
P_B	0.006

Table III.124. Online participation and final performance for males

Males	Complete	Partial	Fail	**Total**
Strong	8	2	2	12
Medium	2	5	3	10
Weak	2	3	3	8
Total	12	10	8	30

Fisher Exact Probability Test	
P_A	0.208
P_B	0.199

Table III.125. Online participation and final performance for females

Females	Complete	Partial	Fail	**Total**
Strong	10	2	1	13
Medium	11	11	1	23
Weak	1	1	3	5
Total	22	14	5	41

Fisher Exact Probability Test	
P_A	0.010
P_B	0.010

D. Discussion of Quantitative Results

To explore the effectiveness of different instructional settings, we looked at changes in achievement and in motivation. Achievement was measured by student grades, while motivation was measured using 16 subscales: Perceived Value of Reading, Perceived Value of Writing, Perceived Value of the Internet, Perceived Value of the Course Overall, Perceived Competence in Reading, Perceived Competence in Writing, Perceived Competence in the Course Overall, Learning Goals with Respect to Reading, Learning Goals with Respect to Writing, Learning Goals with Respect to Performance in Reading and Writing, Interest/Enjoyment, Use of Learning Strategies, Persistence in Reading and Writing, Perceived Pressure, Perceived Control over Course, Perceived Choice

in Taking the Course. The blended, socio-constructive setting was then analyzed in greater detail to determine the variables that had an influence on the extent of online participation by the students, as well as on their achievement in the course.

Overall, achievement is generally higher in settings with blended delivery, while persistence is higher in settings with a socio-constructive pedagogical approach. Students in settings with blended delivery feel more pressure and feel that they have less of a choice in participating in the course, while their perceived competence in reading and perseverance in the course is also lower. Nevertheless, their perceived competence in the course overall is higher than that of students in the settings with face-to-face delivery. The value of writing is somewhat higher in students in settings with the socio-constructive pedagogical approach, while their interest in the course is lower. When the blended socio-constructive setting was analyzed separately, it was found that online participation in males is related to teacher activity and student attitude, while persistence and online participation, as well as final achievement and online participation, are related for all students.

a. Achievement

Students in settings with a traditional pedagogical approach were found to have a significantly higher **gain in achievement** than those in settings with a socio-constructive approach but not when the effect of instructional setting on final achievement and the effect of instructional setting on persistence in the course are analyzed. This gain in achievement is still apparent when gender is

controlled for, but not significantly so, with females having a slightly higher achievement gain than males. However, when prior achievement is controlled for, the effect of pedagogical approach disappears with students in the settings with blended delivery, especially the females, having a significantly higher achievement gain than those in face-to-face settings. Furthermore, there appears to be an interaction between socio-constructive and blended delivery for females, but this interaction is not significant. A possible explanation for the shift from an effect of the traditional approach to an effect of blended delivery when prior achievement is controlled for, is that the blended, socio-constructive setting was comprised mainly of students in the Effective Reading and Writing course, which is a more advanced course than the Academic Writing Skills course. All students in the settings other than the blended socio-constructive setting were in an Academic Writing Skills class, while only a small percentage of the students in the blended socio-constructive setting were not in Effective Reading and Writing. Since many of the students in the blended, socio-constructive setting were initially more advanced, they had less room for improvement than students in the other settings; therefore, once prior achievement is controlled for, the effect of the traditional approach disappears and the effect of blended delivery emerges. How all this data contributes to our conclusion that a blended approach to teaching English as a Second Language can contribute to higher achievement will be addressed in our conclusion.

b. Motivation

According to the results of the motivation questionnaire, students in settings with blended delivery experienced a significantly higher gain in **pressure** than students in the settings with face-to-face delivery, even when controlling for gender. This effect is lost when controlling for prior achievement and gender, with males in settings a traditional pedagogical approach experiencing a significantly higher gain in pressure than those in settings with a socio-constructive approach. Students in the blended socio-constructive setting, who also made up the majority of the students in settings with blended delivery, may have felt an increase in pressure due to an increase in the amount of work that they had to do online in addition to their normal workload. Furthermore, many students may have felt additional stress at having to use unfamiliar technology to complete their homework. These important findings about online learning will be dealt with in our conclusion, which will include some recommendations for educators.

The motivation questionnaire also looked at how much students valued certain aspects of the course including reading, writing, the course overall, and the Internet. The only one of these that differed between instructional settings was the **value of writing**, with students in settings with a socio-constructive approach valuing writing more than students in settings with a traditional approach. The traditional method of teaching writing is to teach students the structure of an essay and then have them practice it repeatedly. On the other hand, one method that was used in settings with a socio-constructive approach involves giving students a piece of writing to read and having them study its

structure on their own, generate a hypothesis regarding essay structure in general, discuss their ideas with classmates and then having them come to a class-wide consensus. This approach requires students to think more deeply and actively about how and why an essay is structured in a given way, instead of simply memorizing a structure that is taught to them passively by a teacher. Therefore, these students may come to value writing more than those who are taught using more traditional non-socio-constructive methods. This particular result is a very interesting finding, as deep learning is important and hard to achieve. It may also account for some of the self-questioning about competency that follows.

In addition to students' values, the motivation questionnaire also sought to determine students' perceived competences in reading, writing, and the course overall. Students in face-to-face settings were found to have a significantly higher **perceived competence in reading** than those in settings with blended delivery even when controlling for gender and prior achievement. When prior achievement is controlled for, this effect is especially important for females. One possible reason for this is that the students in settings with blended delivery did more of their reading online. If these students did not print out the readings, then it was likely difficult for them to highlight important aspects of the text or mark up the text with their own notes; therefore, these students may have felt that they were not as competent in reading as they could have been. We will be returning to the point later on. However, students in settings with blended delivery were found to have a higher **perceived competence in the course overall** than those

in face-to-face settings, when controlling for prior achievement. Although these students felt more pressure than other students and had a lower perceived competence in reading, the extra work and thinking involved in courses with blended delivery, especially those courses within the blended socio-constructive setting (Setting IV), may ultimately have helped them feel more confident in the course overall.

Students in settings with a traditional pedagogical approach were found to have a higher gain in **interest** than those in the socio-constructive setting, even when the analysis was controlled for gender and prior achievement. When prior achievement is controlled for, this effect is especially important for females. This is contrary to what one would expect, as the socio-constructive approach requires more thinking and exploration on the part of the student. However, it is possible that this extra thinking about, for example, the structure of an essay might not have been considered “interesting” to the students, even if it resulted in an increase in their perceived value of writing and in their overall sense of achievement.

Students in face-to-face settings were found to have a significantly higher change in **perseverance** in the course than those in the blended setting, even when the analysis is controlled for gender and prior achievement. When prior achievement is controlled for, this effect is only apparent for males, but not significantly so. Many of the questions relating to perseverance in the motivation questionnaire related to whether students continued to read something even if it they found it difficult or whether they read over difficult passages multiple times;

therefore, the less positive change in perseverance for the students in settings with blended delivery may be related once again to the online readings of the blended socio-constructive setting, which student may have had difficulty marking up or highlighting. Recommendations for improvements in this regard will be addressed in the conclusion.

Students in settings with face-to-face delivery were found to have a significantly higher positive change in their **perceived choice** on participating in the course than those in settings with blended delivery, even when the analysis is controlled for gender and prior achievement. When prior achievement is controlled for, this effect is only apparent for females, but not significantly so. Although a student's choice to participate in any of the courses was their own, it is possible that this perceived lack of choice on the part of the students in settings with blended delivery may be due to their inability to choose whether or not to partake in the online component of the course. In other words, these students had no idea when they registered for the course that they would be required to complete a portion of their coursework online. We will be making recommendations with respect to the matter in the conclusion.

c. Setting IV: Blended Socio-constructive Online Learning

The blended socio-constructive setting (Setting IV) was analyzed separately to determine how online participation and achievement were related to various factors. For males, **online participation** was found to be significantly related to teacher online activity and student attitude and feedback, with online participation increasing with increasing teacher online activity and with more

positive attitudes towards online learning. A possible explanation for both of these relationships is that there is a tendency for females to do their work regardless of their teacher's effort and regardless of their own personal feelings towards the work, while males need constant feedback from the teacher and will not perform the necessary work if they have negative feelings towards this work (Porche and Spencer, 2000). Online participation was also found to be related to student persistence in the course, which makes sense, as a lot of the work is done or announced in class; therefore, those who do not attend classes are not there to perform the work, nor are they there to hear about necessary homework. This particular result, although fairly obvious, serves to validate our collection procedure.

Final achievement, but not achievement gain, was found to be significantly related to online participation. Those with higher final results were the students who participated most online. This result does not indicate any causal effects and could just be due to the tendency of those who participate more to be stronger achievers, even though they did not necessarily have stronger pre-test scores. This result raises the important point that in second language learning research, pre-test scores that assess language skills are not necessarily related to student achievement in general, and thus might give no indication as to whether a student is a "strong achiever" overall. It is also interesting to note that there was no effect of **achievement gain**; that is, students who participated more online were no more likely than other students to experience a greater *change* in achievement over the semester, though they

were more likely to have a higher final grade. What all of this tells us is that of those who participated actively online, pre-test scores were not good predictors of final achievement. **Attitude**, as measured by student feedback, might be a more important indicator of final achievement for these students.

IV. Qualitative Results

Students in all instructional settings completed a Knowledge questionnaire at the beginning and at the end of the course. The goal of this questionnaire was to assess what students say they know about the process of writing a five-paragraph essay. It is important to differentiate between what students *say* about how to write an essay and whether they *apply* this knowledge when actually writing an essay. Therefore, essays written by the students in each instructional setting were also assessed at the beginning and at the end of the course and studied to determine to what extent they included the standard components of an essay cited in student responses to the Knowledge Questionnaire. For the purpose of this analysis, the pre-test results of all students were grouped together with the exception of those from students in Effective Reading and Writing (ERW). The underlying assumption is that there is no significant difference in the level of incoming students in the various sections of Academic Writing Skills (AWS). However, based on placement testing procedures, we know that students in the ERW course are more advanced than those in AWS. For this reason both the responses of ERW students to the Knowledge Questionnaire and their actual essays were analysed separately from those of students in the AWS course.

A. Evolution of Knowledge - Essay Writing

The Knowledge questionnaire consisted of six questions concerning the essay writing process, from the selection of a topic through to the revision of the

essay. Answers for each question were coded according to categories that emerged from the data i.e. the categories were not predetermined nor prescriptive, but simply descriptive. In general, codes referring to stronger strategies have been placed at the bottom of the Y-axis, while codes referring to weaker strategies have been placed closer to the top. Please note however that the placement of codes along the Y-axis does not represent an exact relationship between the underlying strategies; it only offers a suggestion as to which strategies we have deemed as stronger or preferred, and those that we see as weaker or less preferred.

a. Question 1 – Choosing an Essay Topic

The first question asked students how they decided upon a topic for an essay. Answers to this question were coded into one or more of the following categories:

1. **Arguments:** The student states or implies that he/she chooses a topic based on the arguments or examples that he/she can come up with to support the main idea. The student often refers to knowledge to generate these examples.
2. **Extrinsic Interest:** The student states or implies that he/she chooses a topic based on what would interest a reader.
3. **Intrinsic Interest:** The student states or implies that he/she chooses a topic based on what interests him/her or what he/she would enjoy writing about.

4. **Knowledge:** The student states or implies that he/she chooses a topic based on what he/she already knows or has experienced. Some students refer to this as the “easy” way because they have something to say and can write a lot about it.
5. **Sources:** The student states or implies that he/she chooses a topic based on sources or documentation he/she might have, including magazines, journals, books, TV news or the Internet.
6. **Needs:** The student states or implies that he/she chooses a topic based on his/her professional or academic needs.
7. **No choice:** The student states or implies that he/she has no choice in selecting a topic for an essay (i.e. the topic is always assigned by the teacher.)
8. **Think:** The student states or implies that he/she chooses a topic by “thinking,” but offers no information as to what this “thinking” might involve or how it might help him/her select a topic.
9. **Title:** The student states or implies that he/she chooses a topic based on whether or not it has a good or interesting title. Title therefore implies that the teacher offers several topic suggestions and the student must select one of them.
10. **Understand:** The student states or implies that he/she chooses a topic based on his/her understanding of the topic. Understanding therefore implies that the teacher offers several topic suggestions and the student must select one of them.

The most frequent responses to the question of how students select a topic were coded as intrinsic interest and knowledge. Those students whose responses were coded as intrinsic interest typically answered that they chose their topic based on what interested them. For instance, one student wrote, 'I simply choose a topic that interests me the most. Because how I will concentrate and have fun in writing my essay depends on the subject.' (Subject #6). Those whose responses were coded as knowledge typically chose their topic based on their own knowledge of the topic: 'I take the topic that I know more about it' (Subject #3).

Generally, across all instructional settings, as the semester progressed, the number of students whose responses were coded as intrinsic interest decreased, while those whose responses were coded as knowledge either remained the same or increased. Furthermore, fewer students left the question unanswered (blank), while more indicated that the teacher assigned the topic and hence that they had no choice in the selection of their topic (no choice). (Figures IV.1, IV.3, IV.5, IV.7, IV.9, IV.11, and IV.13).

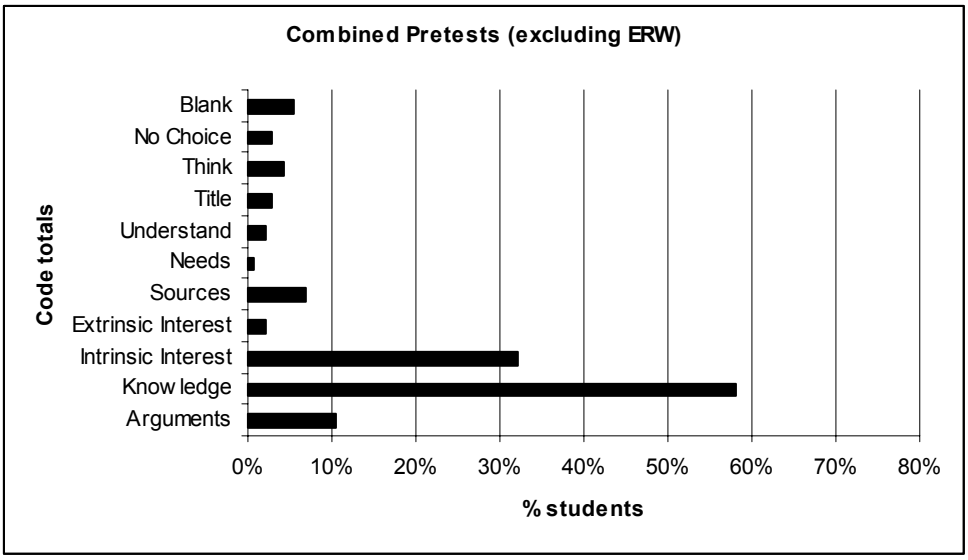

Figure IV.1. Code totals per student for Question 1 for all pre-tests excluding Effective Reading and Writing.

Since students often give complex answers that cannot be coded under just a single category, it is also of interest to look at their answers as a whole. At the beginning of the course, most students gave simple answers that were assigned a single code, mostly knowledge or intrinsic interest. However, some did give answers that were classified under two or even three categories. In such cases, one of these codes was usually knowledge and this was usually accompanied by one or more other codes. In general, the number of different combinations decreased as the semester progressed; 19 distinct combinations were identified during pre-testing. However, the percentage of individuals who gave more complex answers generally increased over the semester, with fewer students limiting their responses to a single concept/category (Figures IV.2, IV.4, IV.6, IV.8, IV.10, IV.12, and IV.14).

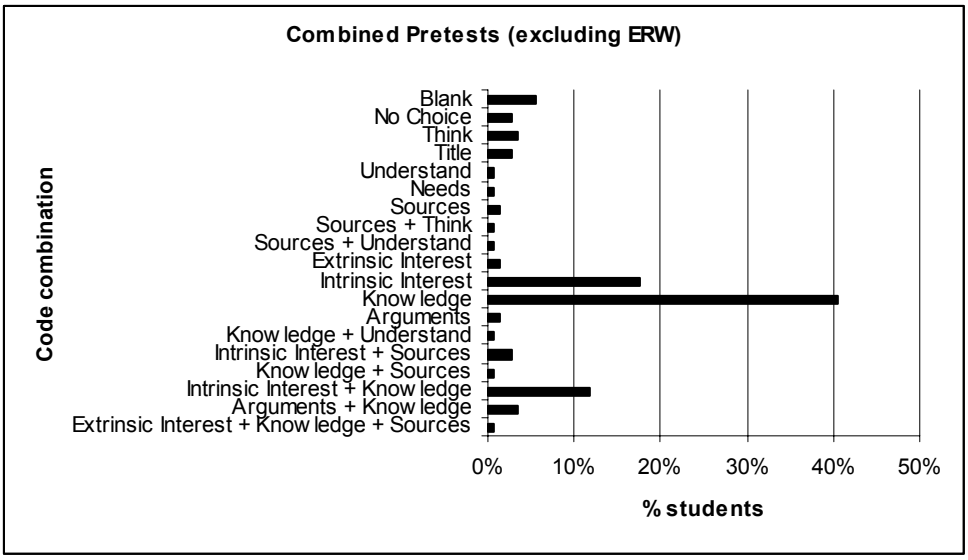

Figure IV.2. Code combinations for Question 1 for pre-tests excluding Effective Reading and Writing.

In addition to the general trends noted above, students in each of the settings exhibited a number of changes that were particular to their respective instructional settings. Students in the traditional non-socioconstructive, non-blended instructional setting (Setting I) showed a slight increase in their reliance on arguments to choose a topic (Figure IV.2). Arguments as a code differs from knowledge in that the students choose a topic based on whether or not they have an opinion on it and can argue this opinion with supporting details and/or examples. More students also indicated that they choose the topic that they understand the most (understand) or that would interest their reader (extrinsic interest). Fewer students choose their topic based on information or sources they might have (sources). No students indicated that they choose their topic based on their own needs (needs) or that they simply picked the one with the best title (title) or that the topic just came to them through thinking or through inspiration (think).

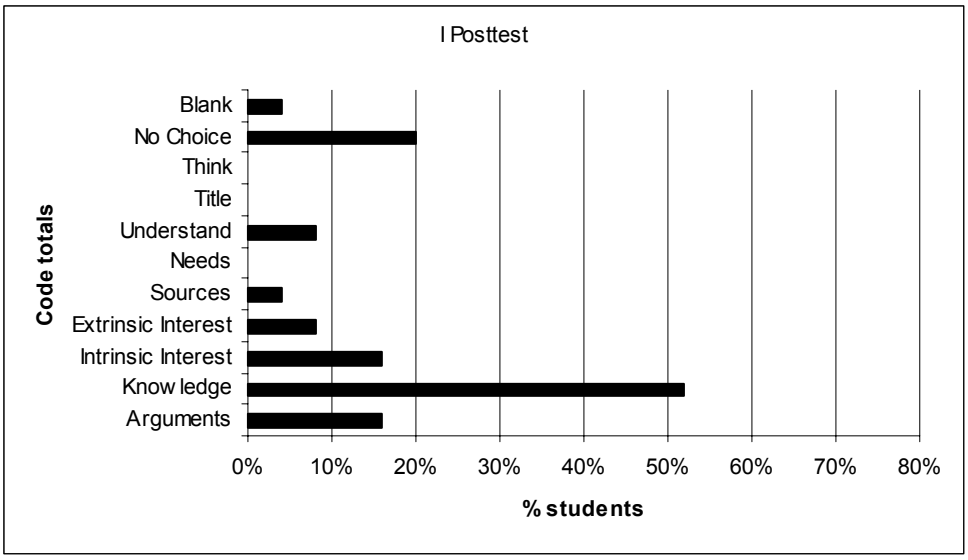

Figure IV.3. Code totals for Question 1 for post-tests in setting I.

For setting I, when looking at combinations of categories of responses, the most frequent response remained knowledge by itself; however, the second most frequent response was no choice. Intrinsic interest was still used often as a category. Most of the combinations, as in the pre-tests, were combinations involving knowledge (Figures IV.2 and IV.4).

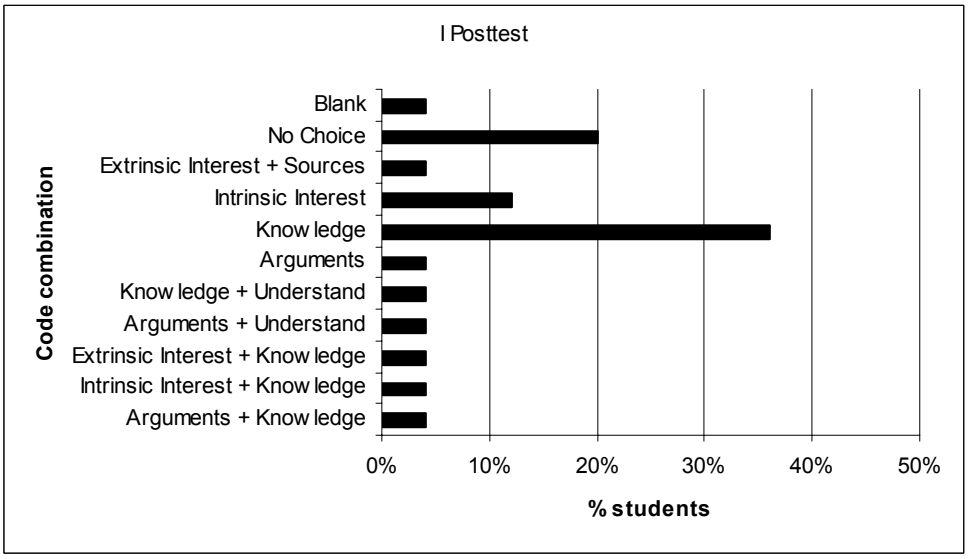

Figure IV.4. Code combinations per student for Question 1 for post-tests in setting I.

Students in the socioconstructive, non-blended setting (Setting II) gave answers that were categorized only as intrinsic interest and knowledge. This was the only group whose use of intrinsic interest to choose a topic increased rather than decreased. However, their use of knowledge also increased (Figure IV.1 and IV.5).

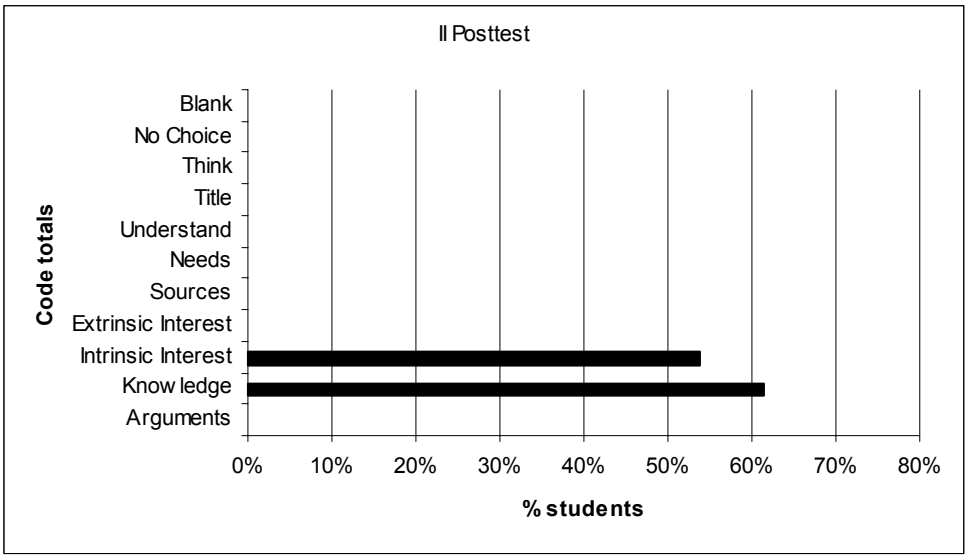

Figure IV.5. Code totals per student for Question 1 for post-tests in setting II.

For setting II, knowledge and intrinsic interest remained the most frequent responses, with the usage increasing from that of the pre-tests; however, a reasonable percentage of students gave answers that combined both of these categories. (Figures IV.2 and IV.6).

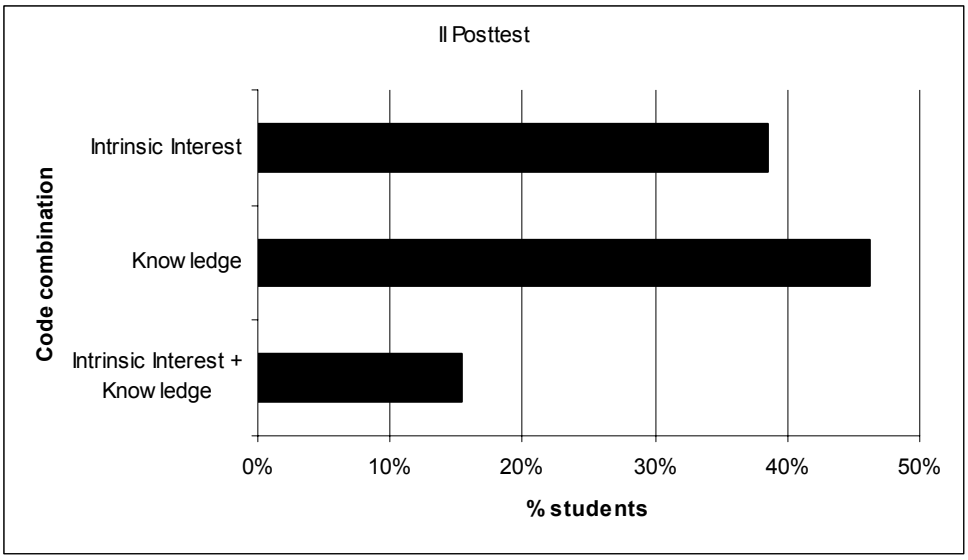

Figure IV.6. Code combinations per student for Question 1 for post-tests in setting II.

For students in the non-socioconstructive, blended setting (Setting III), the total use of knowledge to choose a topic actually decreased. However, their use of arguments and sources increased. They also showed an increase in their use of the weaker strategies of understand and think (Figure IV.1 and IV.7).

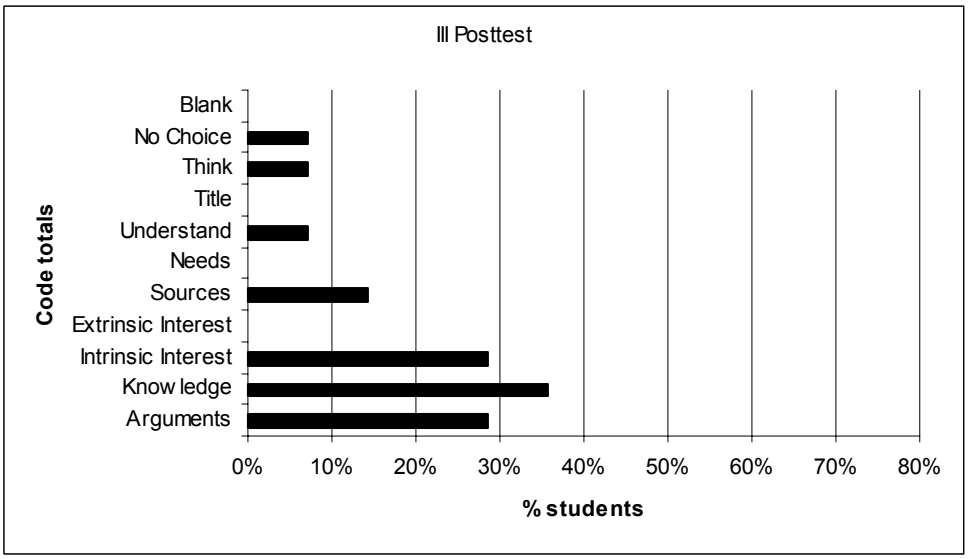

Figure IV.7. Code totals per student for Question 1 for post-tests in setting III.

For setting III, even when considering combinations of responses, arguments by itself was the most frequently occurring category of answers. Knowledge and intrinsic interest by themselves appear to have decreased in their occurrence, but they remain important in combination with other responses (Figures IV.1 and IV.8).

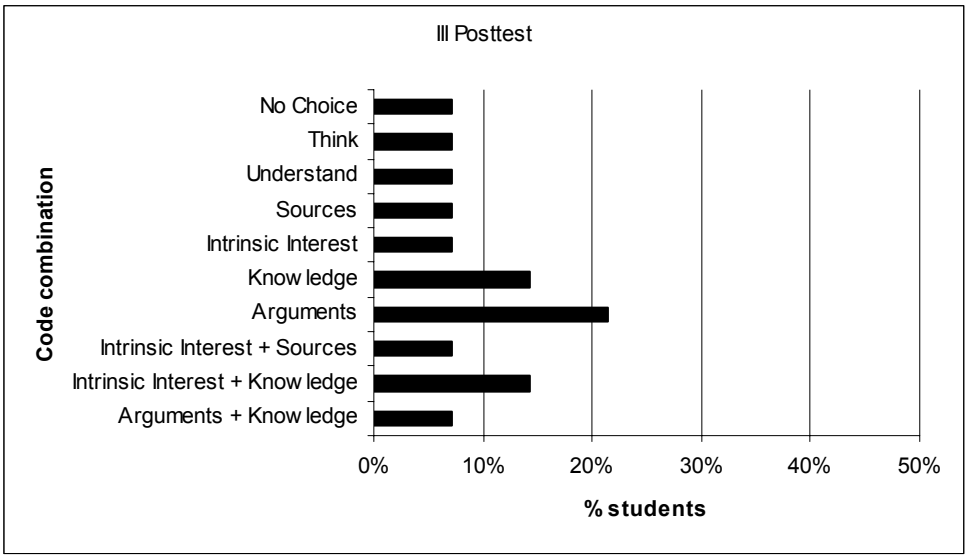

Figure IV.8. Code combinations per student for Question 1 for post-tests in setting III.

Students in the socioconstructive, blended setting (Setting IV) from the Academic Writing Skills course showed a great increase in their use of knowledge. They also showed an increase in their use of arguments. However, they also increased in their use of the weaker response of understand, but did not rely on other weaker responses such as needs, title, and think. As compared to students in Settings I and III, a smaller percentage of students (in relation to the pre-tests) indicated that they had no choice in their selection of essay topics (Figures IV.1 and IV.9).

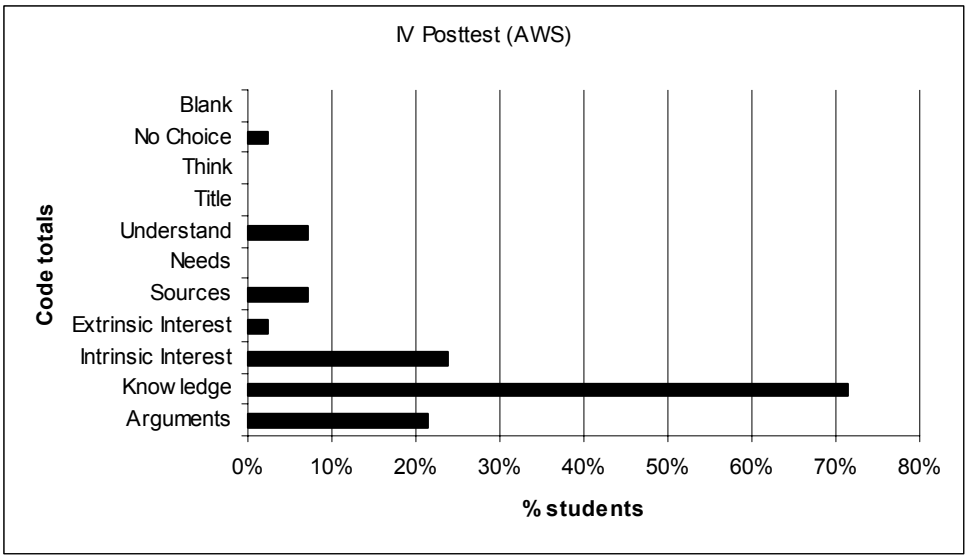

Figure IV.9. Code totals per student for Question 1 for post-tests in setting IV (Academic Writing Skills).

When taking code combinations into account, knowledge as a response strongly outweighed other responses of students in this group. Most other responses were given as combinations; most of these were combinations involving knowledge, as was the case in the pre-tests. Combinations involving arguments, intrinsic interest, and sources were also observed (Figures IV.2 and IV.10).

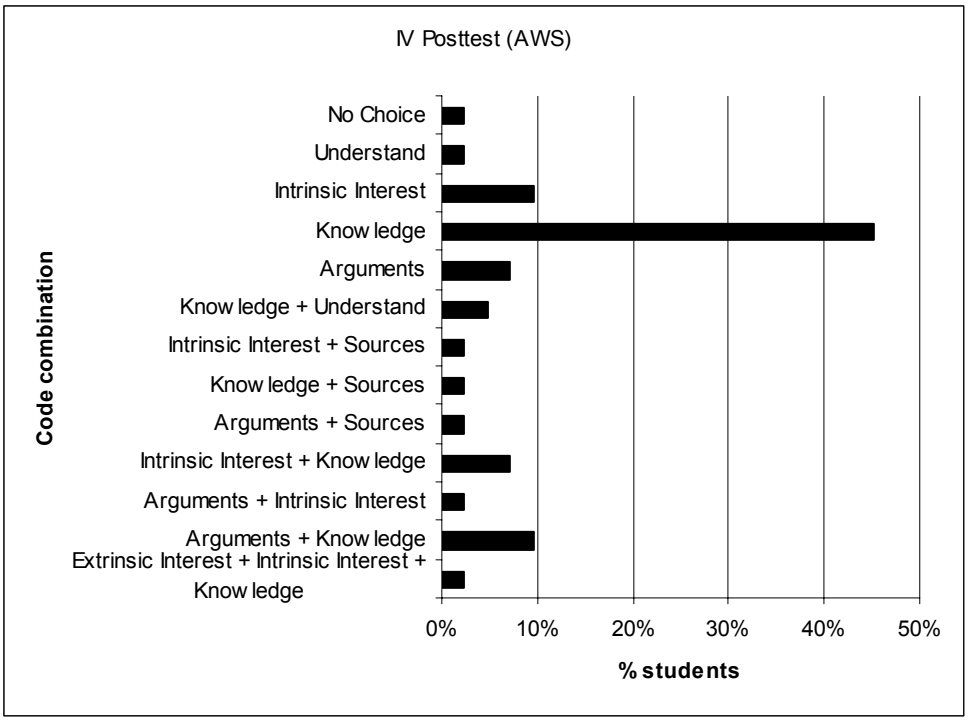

Figure IV.10. Code combinations per student for Question 1 for post-tests in setting IV (Academic Writing Skills).

In contrast to the pre-tests of students in Academic Writing Skills, the pre-test responses to Question 1 from students in Effective Reading and Writing (Setting IV) focused mainly on the importance of intrinsic interest in choosing a topic for an essay, with knowledge following closely behind. In the AWS pre-tests, the reverse was observed. In ERW, a greater percentage of students also felt that they had no choice in the selection of their topic as compared to students in AWS. None of the responses for the students in ERW were categorized as needs or title at the beginning of the course (Figures IV.1 and IV.11).

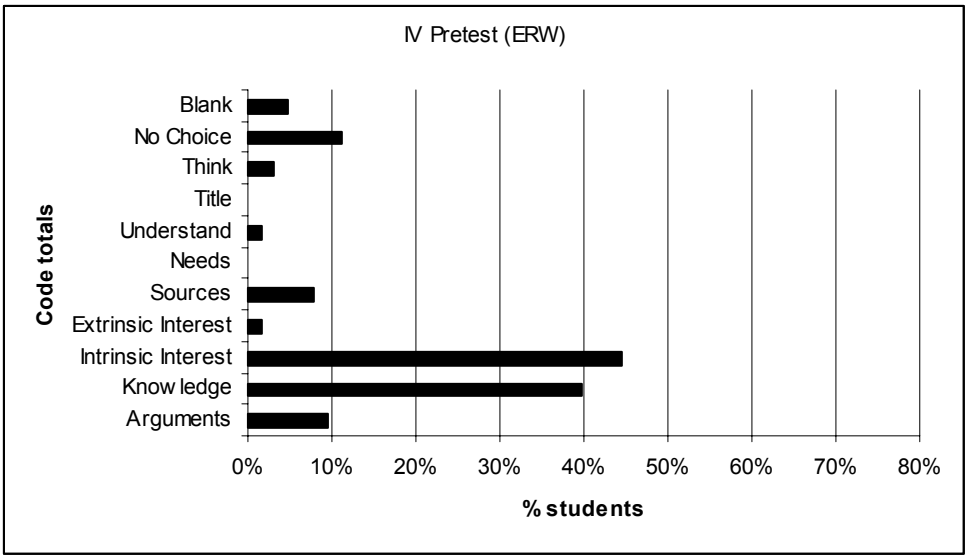

Figure IV.11. Code totals per student for Question 1 for pre-tests in setting IV (Effective Reading and Writing).

When considering pre-test code combinations, it is interesting to note that fewer students in ERW responded with knowledge by itself,, as compared to students in AWS. A greater number of the ERW responses were coded as only intrinsic interest, while the more complex answers involved combinations of intrinsic interest and knowledge, rather than just knowledge, as was the case for AWS (Figures IV.2 and IV.12).

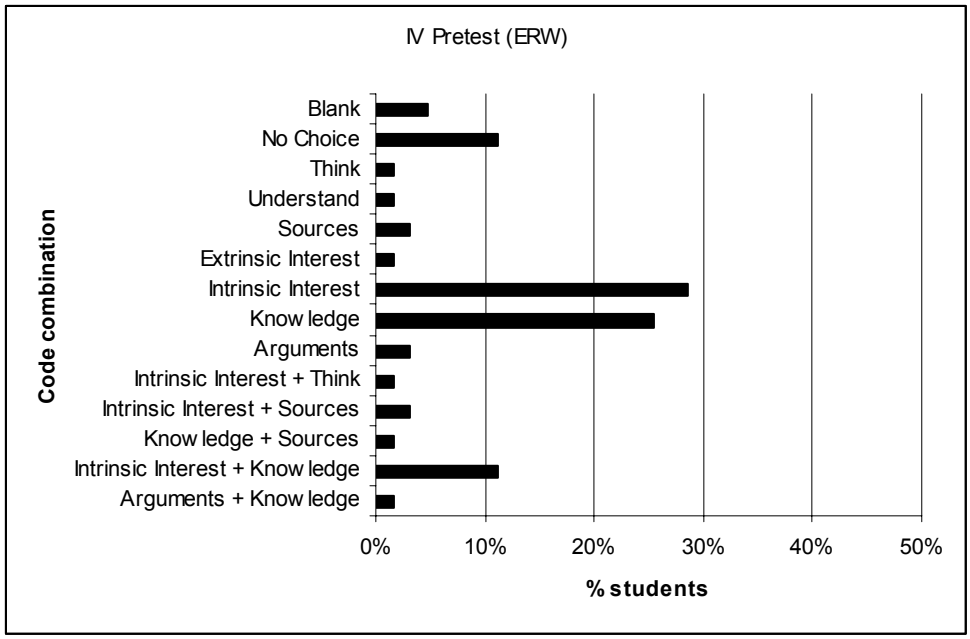

Figure IV.12. Code combinations per student for Question 1 for pre-tests in setting IV (Effective Reading and Writing).

For the students in the ERW course in Setting IV, the use of knowledge and arguments to choose an essay topic increased over the semester, while the use of intrinsic interest decreased. Fewer or no students responded that they chose an essay topic by relying on extrinsic interest, sources, or think, while a greater percentage indicated that they chose the topic that they understood the most (Figures IV.11 and IV.13).

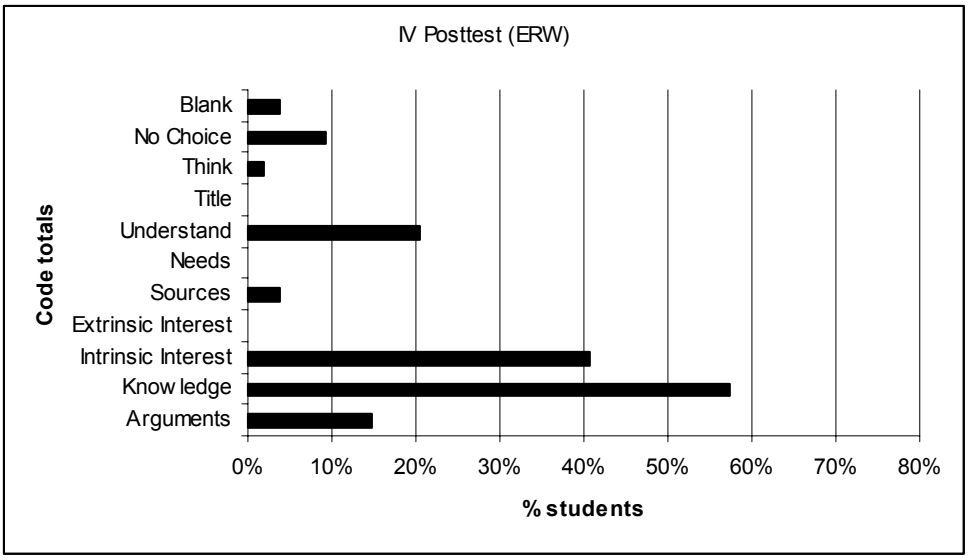

Figure IV.13. Code totals per student for Question 1 for post-tests in setting IV (Effective Reading and Writing).

Many more combinations were used in the post-tests for ERW students as compared to the pre-tests. Most of these combinations involved knowledge, intrinsic interest, arguments, and understand, while the code sources also appeared (Figures IV.12 and IV.14).

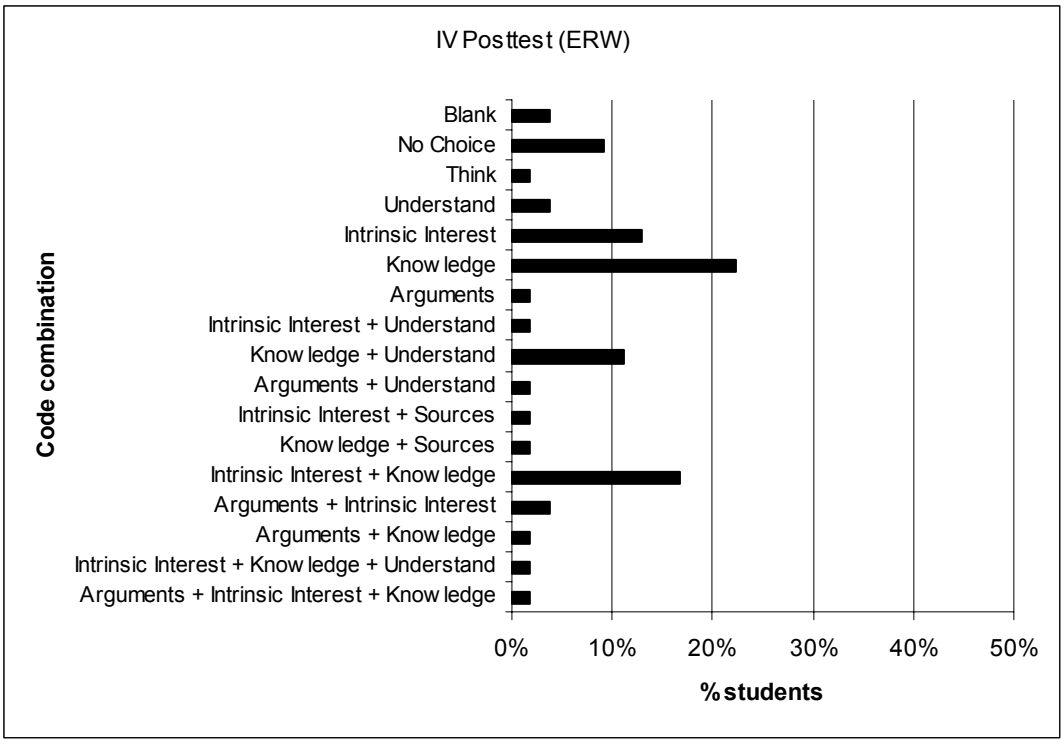

Figure IV.14. Code combinations per student for Question 1 for post-tests in setting IV (Effective Reading and Writing).

In summary and in general, the number of students who choose their topic based on interest decreased, while the number of students who choose their topic based on knowledge either remained the same or increased over the semester. The importance of knowledge by itself or in combination with other strategies was evident in all groups. The use of one's knowledge in writing an essay may bring students one step closer to using the stronger strategy of selecting a topic based on arguments. This strategy (arguments) seemed to be more important to students in the blended settings (Settings III and IV). It also appears that, in the non-socioconstructive settings (Settings I and III), a higher percentage of students at the end of the course felt that they had no choice in their essay topic as compared to at the beginning of the course. Finally, it is reassuring to note that as students become more experienced in essay-writing,

they rely on a greater variety of strategies in selecting an essay topic. This evolution is noted in both AWS and ERW students.

b. Question 2 – Deciding What to Write

The second question asked students how they decide what to write after deciding upon a topic. Responses to this question were coded into one or more of the following categories:

1. **Arguments**: The student states or implies that he/she chooses what to write based on the arguments he/she will use in the essay. This can include ideas and examples to support the topic, and for several students is related to the concept of essay structure (or ABC).
2. **Explaining topic**: The student states or implies that he/she decides what to write by just explaining or describing the topic (i.e. sharing his/her knowledge on the topic).
3. **Sources**: The student states or implies that he/she decides what to write by consulting secondary sources or documentation he/she might have (e.g. magazines, news articles, journals, books, or the Internet).
4. **Strategy**: The student states or implies that he/she chooses what to write based on a certain strategy. Strategies include outlining, brainstorming, and free writing.
5. **Teacher**: The student states or implies that he/she chooses what to write based on what he/she thinks the teacher wants.
6. **Topic**: The student states or implies that he/she chooses what to write based on the topic or that he/she "just writes" what comes to mind.

7. **Vocabulary**: The student states or implies that he/she chooses what to write based on vocabulary words that he/she can come up with related to the topic.

The most frequent responses to this question related to strategy, arguments, and explaining topic. Those students whose responses were coded as strategy typically indicated that they choose what to write based on strategies such as free writing, brainstorming, or outlining. For instance, one student wrote, 'I write everything that comes up into my mind and try to put details and examples to support them.' (Subject #6). Those whose responses were coded as arguments typically choose their topic based on arguments that can be used in the essay. Subject # 3 wrote, 'I start thinking about all the arguments. And I choose the better one, to prove that I'm right.' Those whose responses were coded as explaining topic typically wrote that they choose what to write by simply explaining the topic or giving all the information on the topic. For example, Subject #22 wrote, 'I don't know - I just try to explain the topic as well as I can.'

Generally, across all instructional settings, as the semester progressed, the number of students whose responses were coded as explaining topic decreased, while those whose responses were coded as strategy increased. (Figures IV.15, IV.17, IV.19, IV.21, IV.23, IV.25, and IV.27).

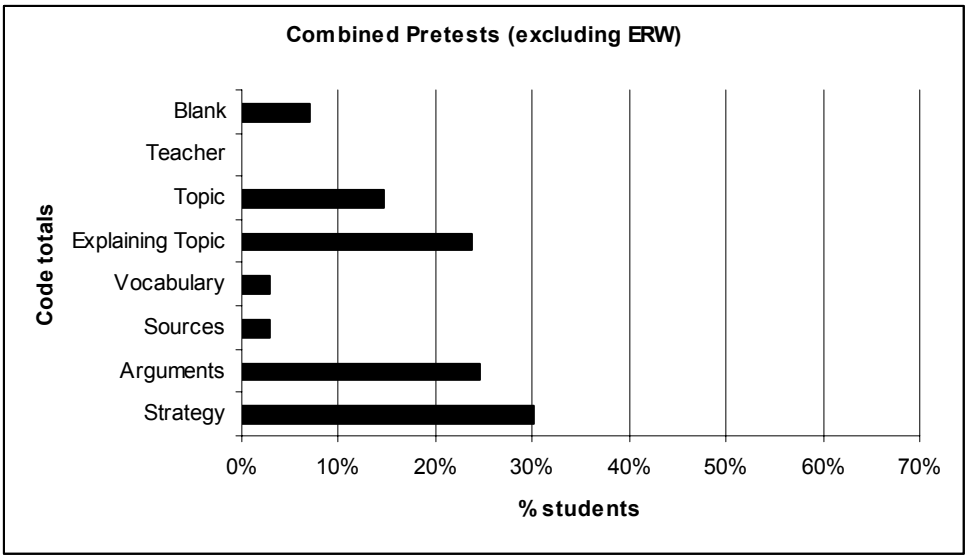

Figure IV.15. Code totals per student for Question 2 for pre-tests excluding Effective Reading and Writing.

For Question 2, few students gave responses that were classified under more than one category. Those who did generally gave responses that were combined with strategy or arguments, with arguments appearing most often in the pre-tests, and strategy most often in the post-tests (Figures IV.16, IV.18, IV.20, IV.22, IV.24, IV.26, and IV.28).

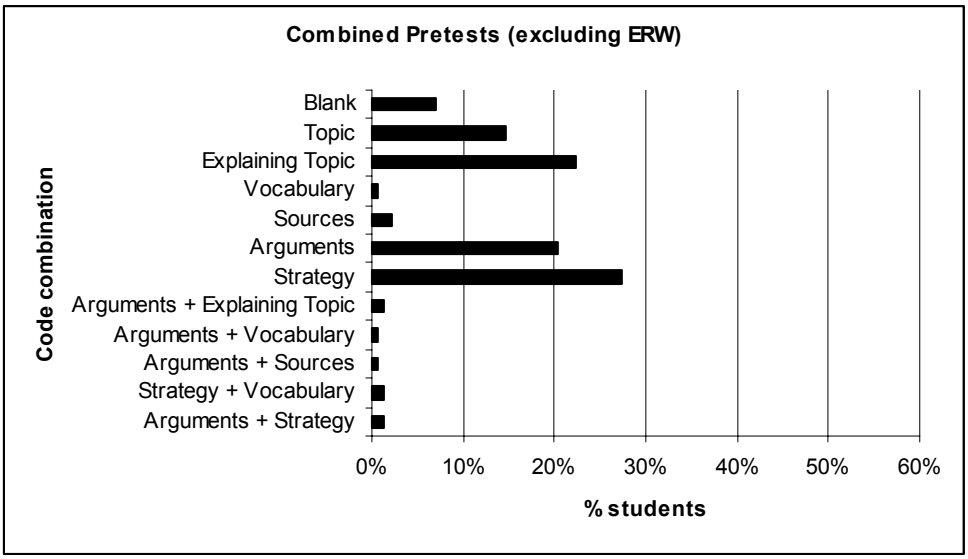

Figure IV.16. Code combinations per student for Question 2 for pre-tests excluding Effective Reading and Writing.

In addition to the changes from pre-test to post-test already noted above, for setting I, a greater percentage of students indicated at the end of the course that they choose what to write in an essay based on arguments and vocabulary. No students responded with answers that were coded as topic, while slightly more said they used sources than at the beginning of the course (Figures IV.15 and IV.17).

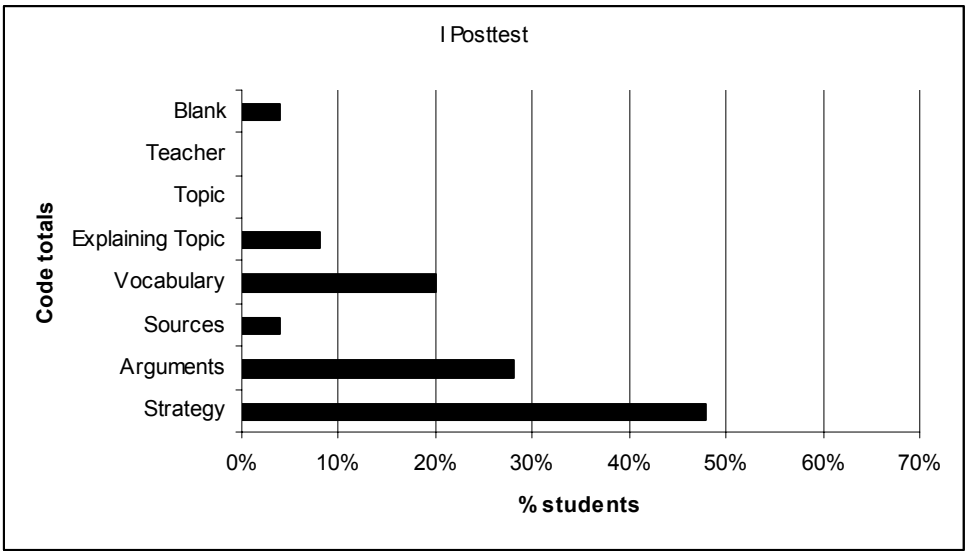

Figure IV.17. Code totals per student for Question 2 for post-tests in setting I.

Those students in setting I whose responses were given more than one code generally indicated that they rely on strategy and either arguments or vocabulary in order to decide what to write (Figure IV.18).

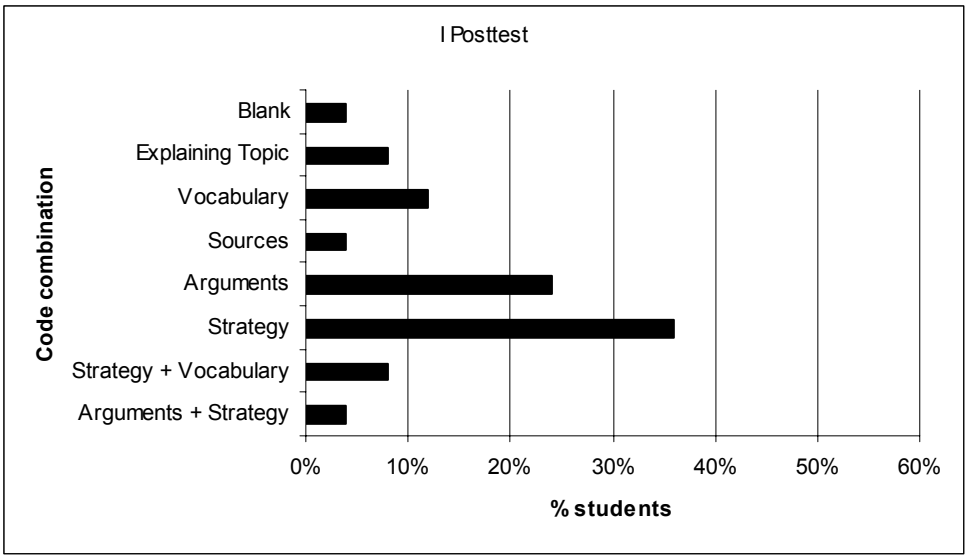

Figure IV.18. Code combinations per student for Question 2 for post-tests in setting I.

For setting II, there was a sharp increase in the percentage of students who indicated that they use strategies when deciding what to write. This change was accompanied by a decrease in the use of arguments. No students said that they use the topic or sources in deciding what to write, but the percentage of those who use vocabulary increased (Figures IV.15 and IV.19).

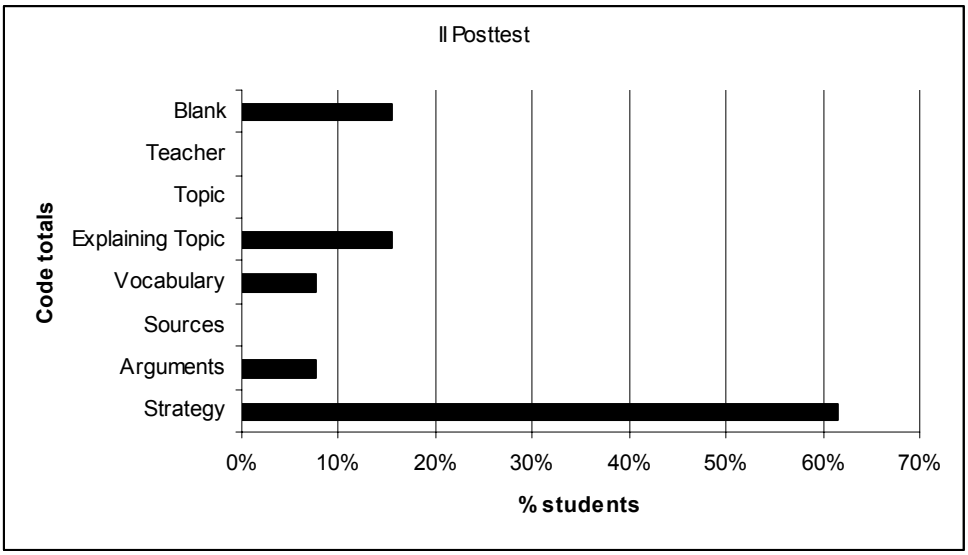

Figure IV.19. Code totals per student for Question 2 for posttests in setting II.

Only one combination of codes was observed in this setting, namely strategy and arguments (Figure IV.20).

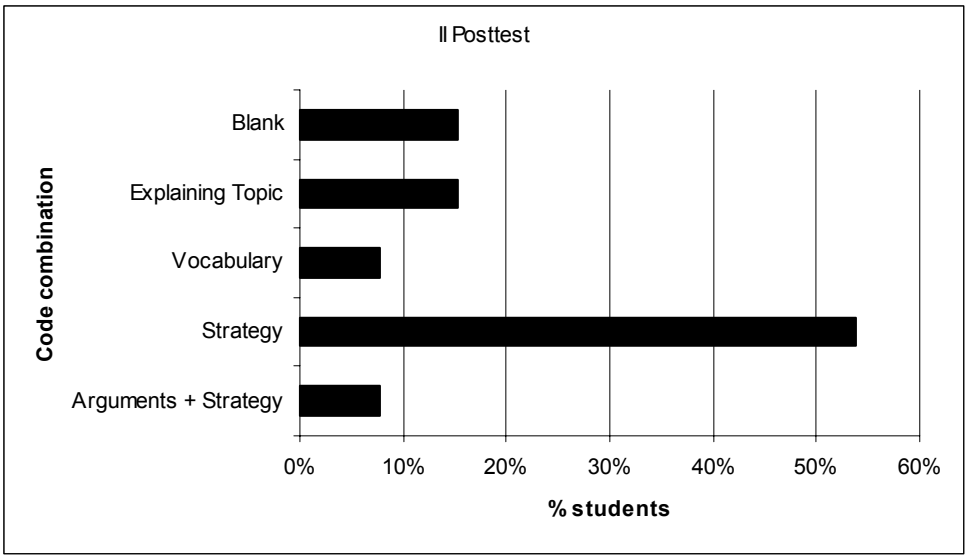

Figure IV.20. Code combinations per student for Question 2 for post-tests in setting II.

For setting III, in addition to the increase in percentage of students who responded that they choose what to write in an essay based on strategy, there was also an increase in the percentage of those who failed to respond (Blank). Arguments and explaining topic were the only other responses given, and the share of these decreased slightly relative to the pre-tests (Figures IV.15 and IV.21).

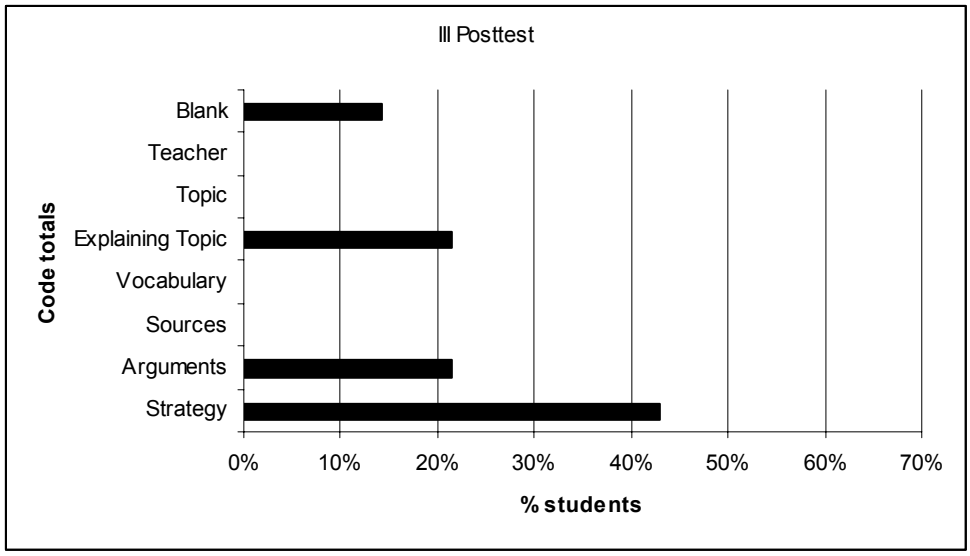

Figure IV.21. Code totals per student for Question 2 for post-tests in setting III.

No student in setting III gave an answer that was given more than one code (Figure IV.22).

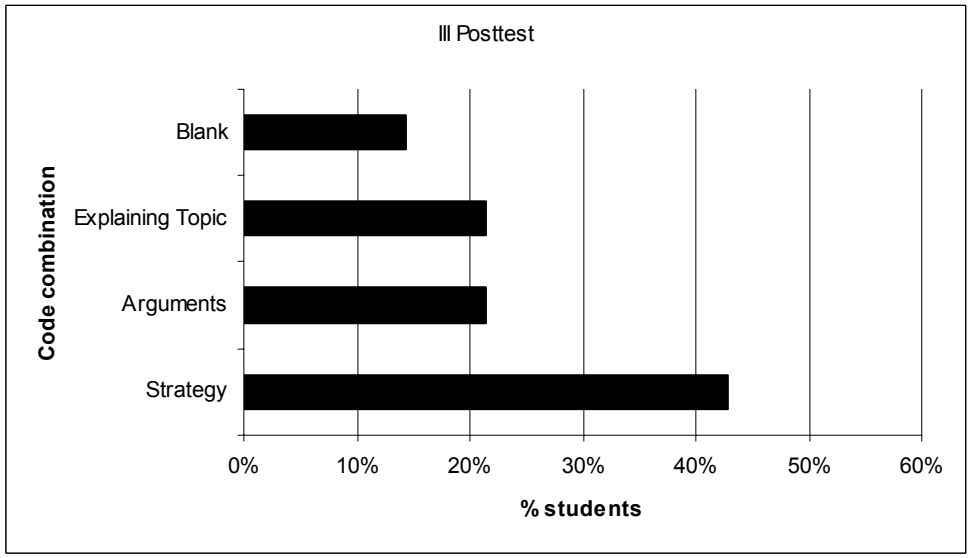

Figure IV.22. Code combinations per student for Question 2 for post-tests in setting III.
(Academic Writing Skills).

For setting IV (AWS), in addition to the increase in the percentage of students who responded that they choose what to write in an essay based on a

strategy, there was a large increase in the percentage of students who responded that they choose what to write based on arguments; arguments appeared to be more important than strategy for this group. In addition to the decrease in the percentage of students' responses that were coded as explaining topic, there was also a decrease in the percentage of responses that were coded as topic (Figures IV.15 and IV.23).

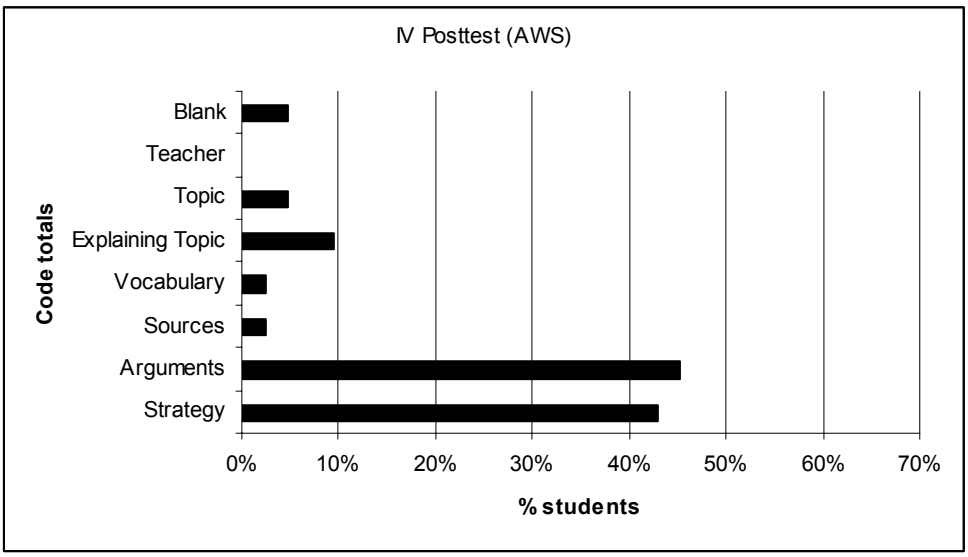

Figure IV.23. Code totals per student for Question 2 for post-tests in setting IV (Academic Writing Skills).

Two combinations of codes were observed in this group, arguments combined with strategy, and strategy combined with sources. (Figure IV.24).

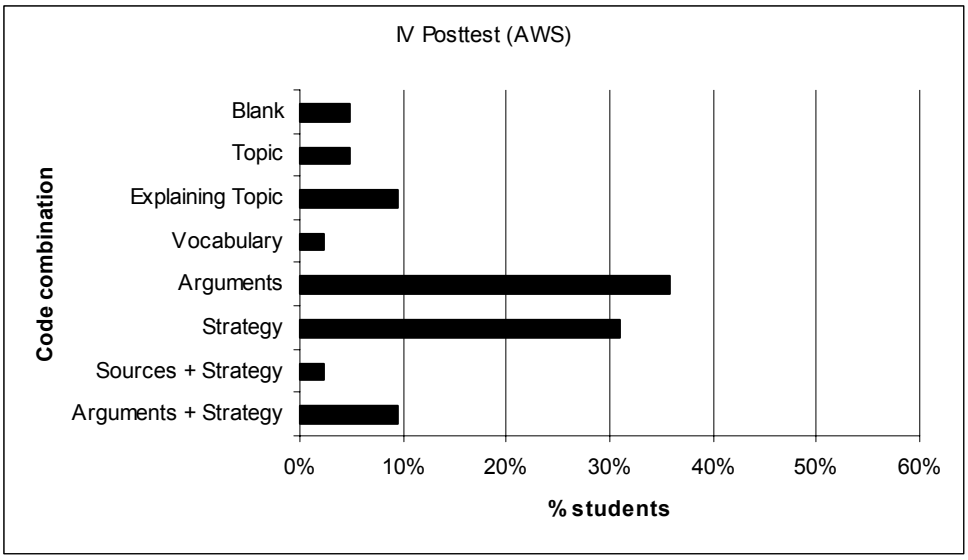

Figure IV.24. Code combinations per student for Question 2 for post-tests in setting IV (Academic Writing Skills).

The pre-tests for the English Reading and Writing students differ significantly from those for the Academic Writing Skills students. A much higher percentage of students responded that strategy and sources are important in choosing what to write and a much lower percentage of responses indicated that far fewer of these students rely on explaining topic or arguments in deciding what to write (Figures IV.15 and IV.25). The fact that many of these students refer to a number of strategies is not surprising given that many of them have taken a previous ESL courses and therefore likely have been introduced to strategies such as brainstorming and free-writing. However, it is interesting that when compared to AWS students, a greater percentage of ERW students have not yet developed the more sophisticated technique of using arguments to generate ideas for writing, It may be when first developing essay-writing skills, students instinctively turn to arguments to generate ideas, but as they are introduced to

different strategies, they become so intent on using the strategy, that they lose sight of the overall purpose of essay-writing – to make a convincing argument.

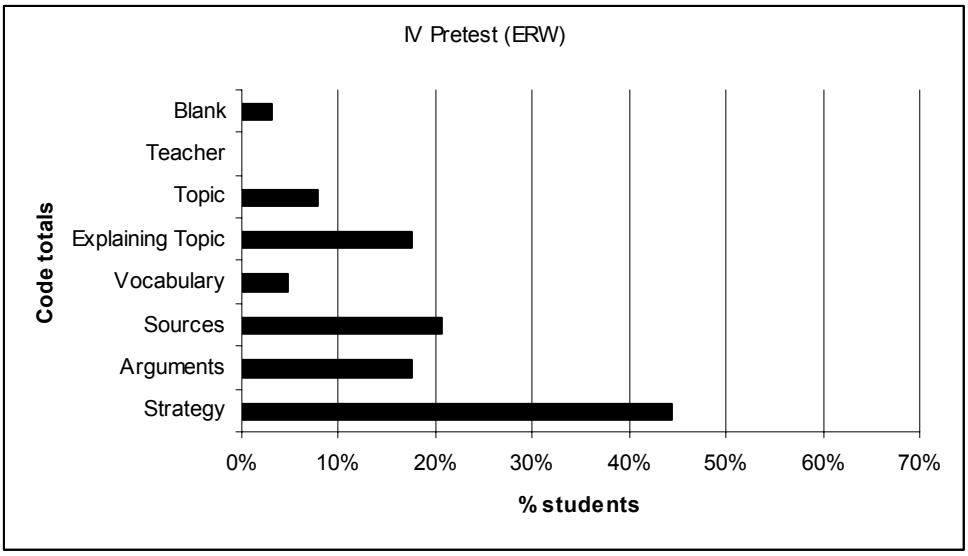

Figure IV.25. Code totals per student for Question 2 for pre-tests in setting IV (Effective Reading and Writing.

As compared to the students in AWS, students in ERW were more likely to identify more than one technique in deciding what to write, even at the beginning of the semester (i.e. a greater number of code combinations were observed in this group). Again, this result is not surprising given that many of these students have been exposed to various techniques in previous courses and are therefore likely to make use of more than one. The most frequently occurring combinations of codes for the pre-tests in this group were combinations involving strategy and combinations involving sources, with combinations involving arguments following closely behind (Figure IV.26).

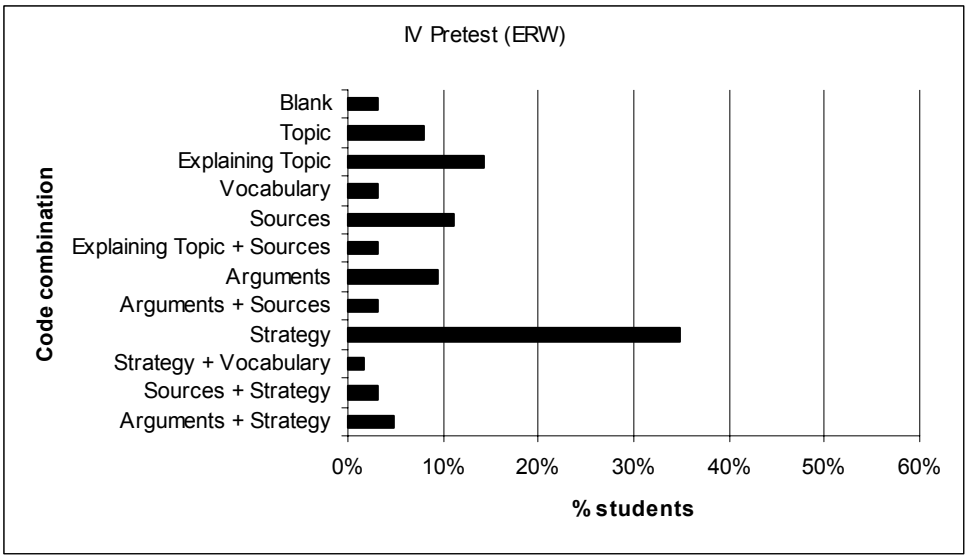

Figure IV.26. Code combinations per student for Question 2 for pre-tests in setting IV (English Reading and Writing).

For this group, the percentage of responses that were coded as strategy and explaining topic in the post-test decreased, while the percentage of responses that were coded as arguments and sources increased (Figures IV.25 and IV.26).

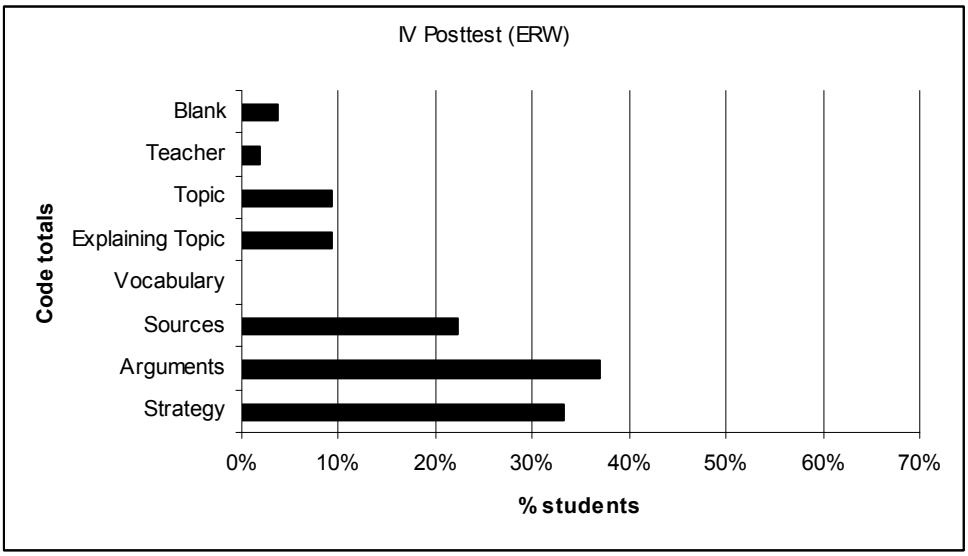

Figure IV.27. Code totals per student for Question 2 for post-tests in setting IV (Effective Reading and Writing.

In this group, we saw more combinations involving arguments and fewer involving strategy in the post-tests, which made the most frequently occurring codes in combination arguments and sources (Figures IV.26 and IV.28).

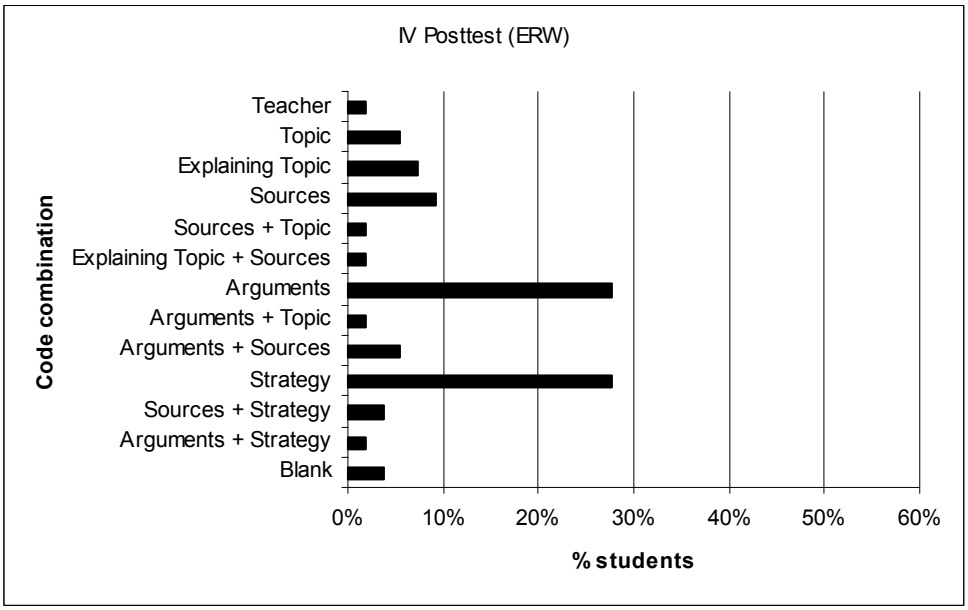

Figure IV.28. Code combinations per student for Question 2 for post-tests in setting IV (Effective Reading and Writing).

In summary and in general, the number of students who choose what to write in an essay by explaining the topic decreased, while the number of students who choose what to write based on a specific strategy increased over the semester. The importance of using a strategy by itself or in combination with other methods of determining what to write was evident in all groups. The use of a strategy is very important when it comes to organizing ideas before writing an essay. Using a strategy to decide what to write seemed to be slightly more important to students in the non-blended settings (Settings I and II). It also appears that, in the blended settings (Settings III and IV), a higher percentage of students emphasized the importance of arguments. Determining one's

arguments is a critical component of strong essay-writing skills , and when used in combination with one or more strategies, demonstrates a certain maturity in essay-writing skills Though a few students did move towards this combination by the end of the semester, most did not. This is really the objective of the four cégep English courses in preparation for the English Exit Exam. Finally, it is interesting to note that the more advanced students in ERW were the only ones who stressed the use of secondary sources when deciding what to write, which is probably because it is a requirement of the course. This can probably be explained by the fact that the ERW course requires students to read and analyse short stories and novels. Literary analysis usually involves reference to the works being studied and the students in ERW were introduced to the idea of supporting arguments with quotes and examples from the works they were studying.

c. Question 3 – Structuring an Essay

The third question asked students how they structured an essay. Answers to this question were coded into one or more of the following categories:

1. **Arguments**: The student states or implies that he/she structures an essay based on arguments, evidence, or examples. This can include supporting ideas.
2. **Body**: The student states or implies that he/she includes a body or development in the structure of an essay. This usually implies that the student develops his/her ideas or topic in at least one separate paragraph.

3. **Conclusion**: The student states or implies that he/she includes a conclusion or an ending in the structure of an essay. This is usually in a separate paragraph.
4. **Introduction**: The student states or implies that he/she includes an introduction in the structure of an essay. This introduces the topic usually in a separate paragraph.
5. **Outline**: The student states or implies that he/she uses an outline to structure his/her essay. This is actually an answer to the previous question, but since it implies some use of structure, it was not disregarded.
6. **Paragraphs**: The student states or implies that he/she structures an essay by breaking it up into paragraphs but does not specify what he/she includes in each paragraph. Many students answered that they structured their essay "step by step," which was classified under this code due to its potential relationship with the use of paragraphs.
7. **Topic**: The student states or implies that he/she structures an essay based on the topic of the essay. This was regarded as a weak response and usually implied that the student simply explained the topic.

The most frequent responses to this question related to introduction, body, and conclusion. These codes were rarely seen alone and were usually combined together. For instance, one student wrote, 'I structure it in beginning the introduction, then the development who's like two or three paragraph and at the

end the conclusion.' (Subject #8). This was sometimes combined with arguments. For example, Subject #3 wrote, 'Introduction with your opinion and argument after developing arguments. Then the conclusion.' Answers that combined introduction, body, and conclusion with arguments were considered to be stronger responses, as it showed the use of an opinion or supporting ideas to develop paragraphs.

Generally, across all instructional settings, as the semester progressed, the number of students whose responses were coded as blank, topic, outline, or paragraphs decreased, while those whose responses were coded as arguments, body, conclusion, or introduction increased. (Figures IV.29, IV.31, IV.33, IV.35, IV.37, IV.39, and IV.41).

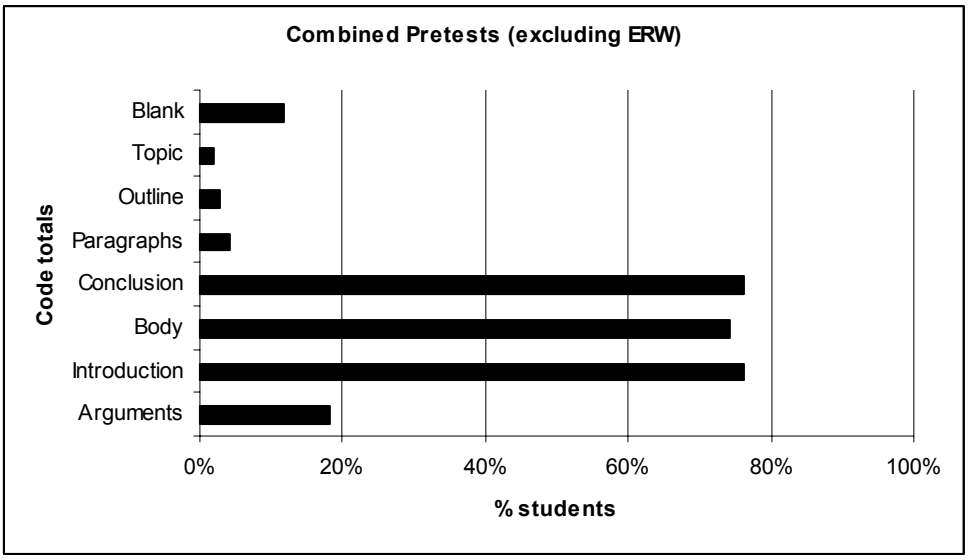

Figure IV.29. Code totals per student for Question 3 for all pretests excluding Effective Reading and Writing.

Prior to the course, most students gave answers that combined introduction, body, and conclusion. At the end of the course, across all settings,

the percentage of students who gave responses that combined these codes decreased while the percentage of those who gave responses that were classified under these codes as well as arguments increased (Figures IV.30, IV.32, IV.34, IV.36, IV.38, IV.40, and IV.42).

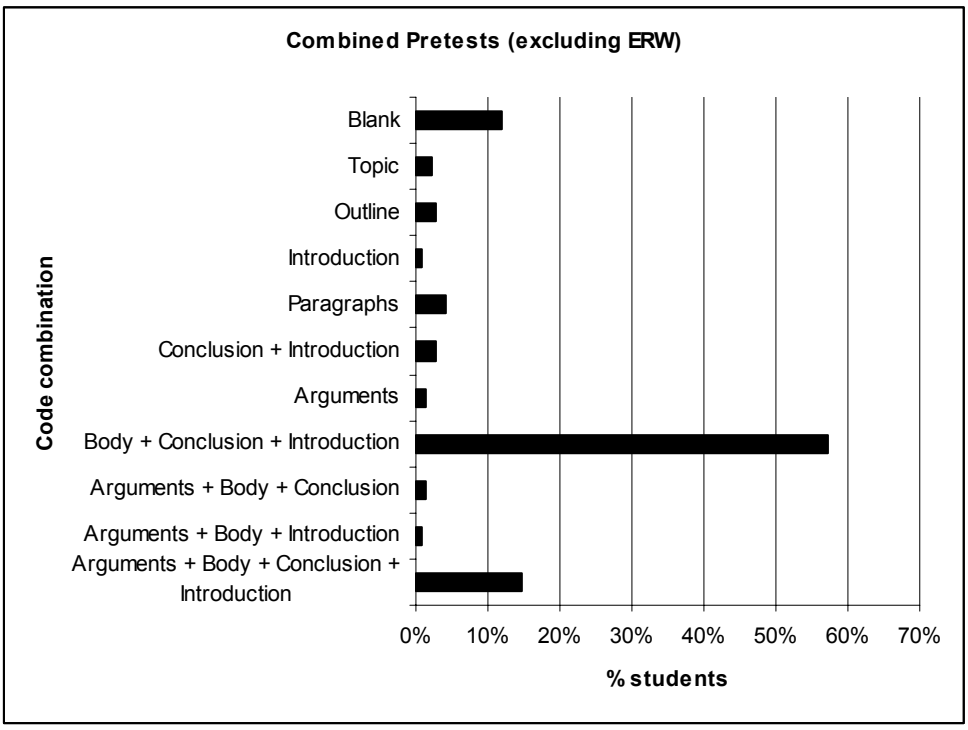

Figure IV.30. Code combinations per student for Question 3 for pretests excluding Effective Reading and Writing.

In addition to the changes from pretest to posttest already noted above, for setting I, a higher percentage of students gave answers that indicated that they structured their essays using paragraphs. No students responded with answers that were classified as topic or as outline (Figures IV.29 and IV.31).

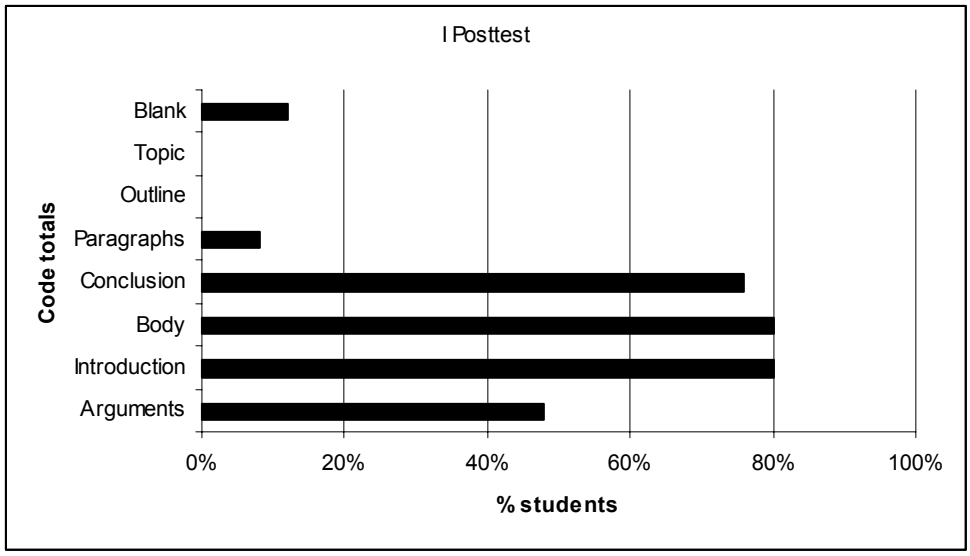

Figure IV.31. Code totals per student for Question 3 for posttests in setting I.

More students in setting I at the end of the course had responses that were given the combined codes of arguments, body, conclusion, and introduction than were given only body, conclusion and introduction. Like in the pretests, a reasonable percentage failed to answer the question, while a small but higher percentage gave responses that were only coded as paragraphs (Figures IV.30 and IV.32).

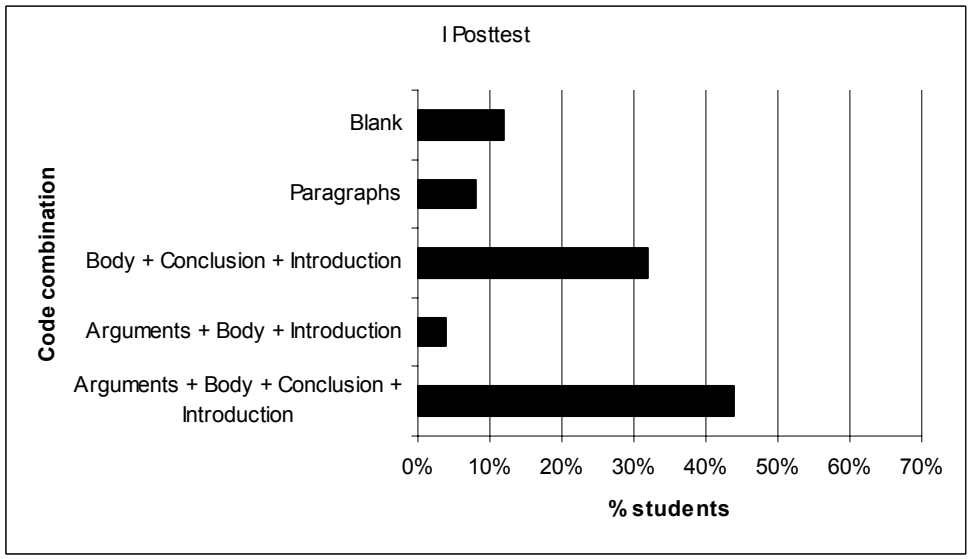

Figure IV.32. Code combinations per student for Question 3 for posttests in setting I.

Similar to setting I, the responses of students in setting II at the end of the course were also classified more frequently as arguments, introduction, body, conclusion, or paragraphs. There was also a slight increase in responses that were classified as outline, while none were classified as topic and no students failed to respond (Figures IV.29 and IV.33).

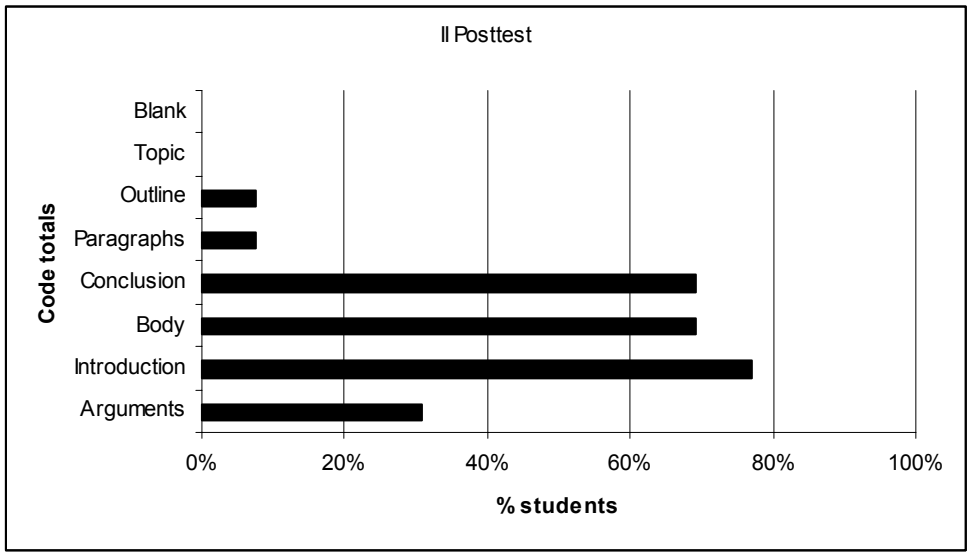

Figure IV.33. Code totals per student for Question 3 for posttests in setting II.

In contrast to the previous setting, the number of students who replied that they structured their essays using arguments, an introduction, a body, and a conclusion was almost the same as in the pretests. Those that said they used only an introduction, a body, and conclusion decreased. However, there was a certain percentage of responses that were given different combinations of arguments, body, conclusion, and introduction including simply arguments by itself, and a combination of introduction and body, as well as arguments, introduction, and conclusion. Paragraphs and outline were codes that were not given in combination with anything else (Figures IV.30 and IV.34).

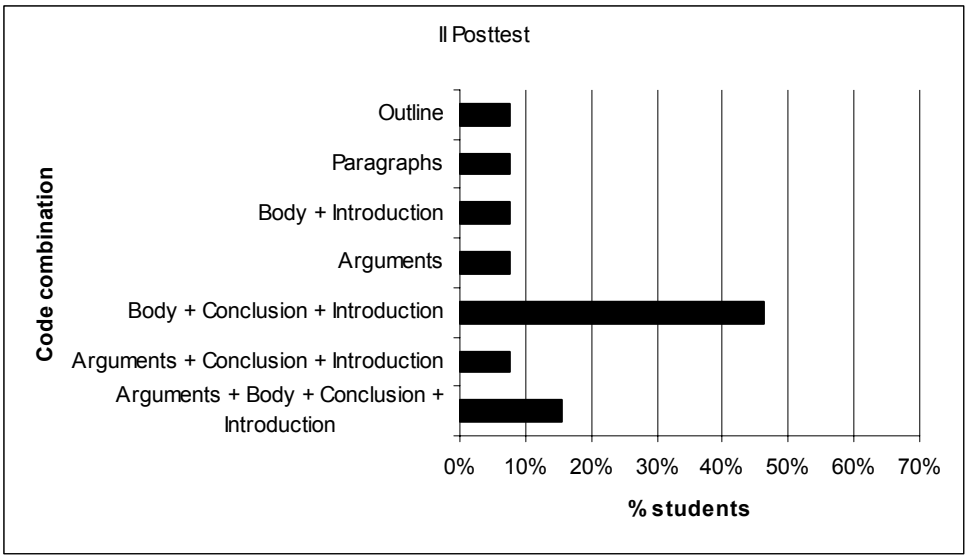

Figure IV.34. Code combinations per student for Question 3 for posttests in setting II.

For the setting III posttests, all students said that they structured their essays using an introduction, while an increased percentage responded that they used arguments, a body, and a conclusion. No other codes were assigned to any of the responses in this setting (Figures IV.29 and IV.35).

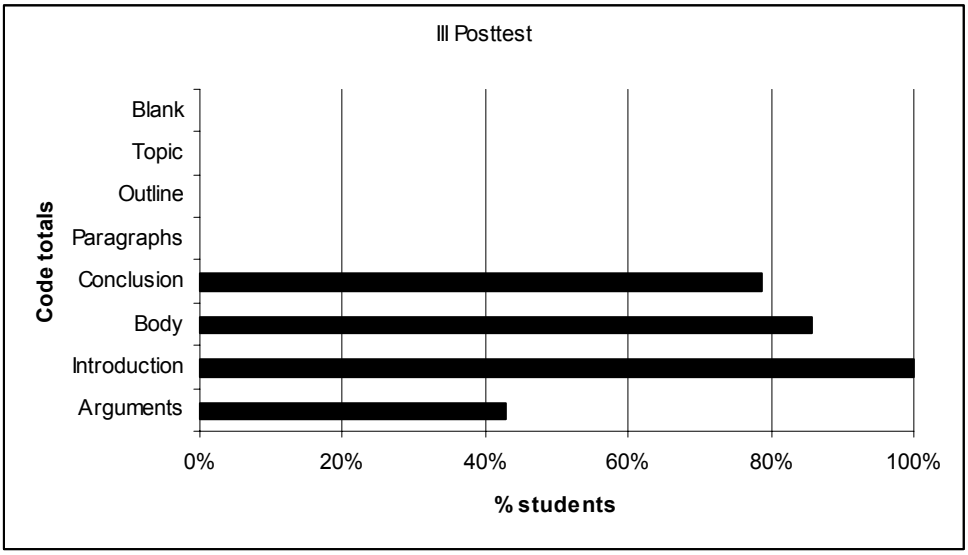

Figure IV.35. Code totals per student for Question 3 for posttests in setting III.

A smaller percentage of responses in this setting as compared to the pretests were coded as a combination of introduction, body, and conclusion, while more were coded as arguments in addition to these codes. Other combinations that were used in a small percentage include introduction by itself, arguments and introduction, as well as arguments, body, and introduction (Figures IV.30 and IV.36).

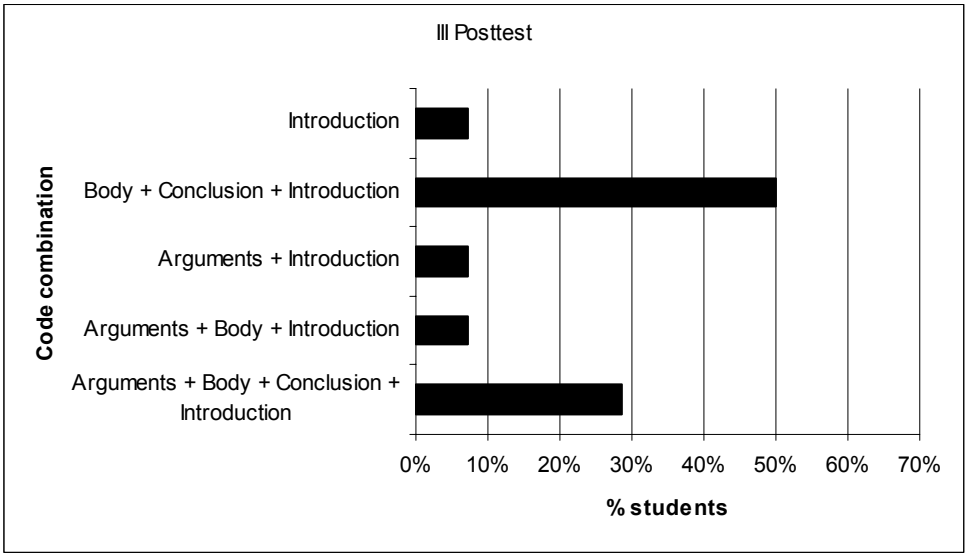

Figure IV.36. Code combinations per student for Question 3 for posttests in setting III.

For setting IV in Academic Writing Skills, there was an increase in the percentage of responses that indicated that the use of arguments, introduction, body, and conclusion was important in the structure of an essay. There was also a slight increase in the percentage of responses that were categorized as using the topic to structure an essay, while there was a decrease in the percentage that were categorized as using paragraphs. There was little change in the percentage of responses that were coded as outline, and no students failed to respond to the question (Figures IV.29 and IV.37).

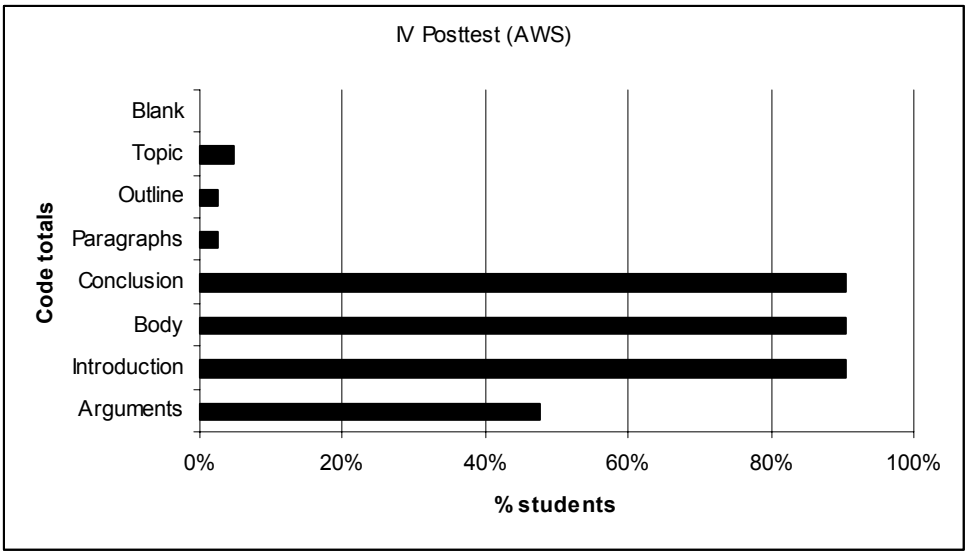

Figure IV.37. Code totals per student for Question 3 for posttests in setting IV (Academic Writing Skills).

In this group, most students responded with answers that were categorized as a combination of either arguments, introduction, body and conclusion, increasing in percentage relative to the pretests, or just introduction, body, and conclusion, decreasing relative to the pretests. The few that were not coded with these combinations indicated that they used arguments in combination with the topic, or only the topic, an outline, or paragraphs to structure an essay (Figures IV.30 and IV.38).

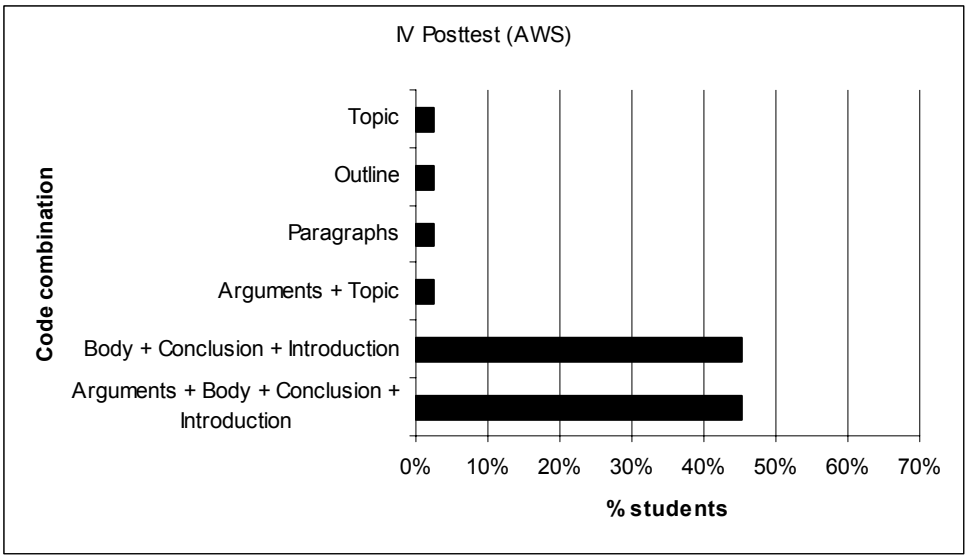

Figure IV.38. Code combinations per student for Question 3 for posttests in setting IV (Academic Writing Skills).

Relative to the Academic Writing Skills pretests, the pretests for Effective Reading and Writing had a similar and even a slightly lower percentage of individuals with responses that were categorized as introduction, body, and conclusion. A higher percentage of students responded that they used arguments to structure an essay, while there was a slight increase in the percentage that said they used an outline and little change in the percentage that said they used paragraphs. A smaller percentage failed to respond to the question, and no students responded that they used the topic to structure an essay (Figures IV.29 and IV.39).

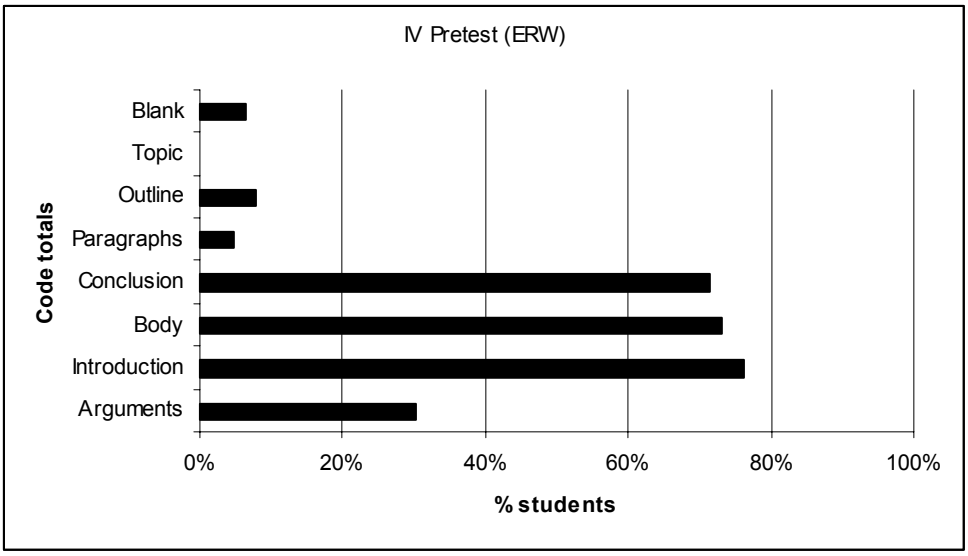

Figure IV.39. Code totals per student for Question 3 for pretests in setting IV (Effective Reading and Writing).

In relation to the Academic Writing Skills pretests, there was a smaller percentage of students who indicated that they combined the use of an introduction, a body, and a conclusion in the structure of their essays. A higher percentage, however, combined arguments, an introduction, a body, and a conclusion. Other code combinations that occurred in low percentages include outline, introduction, body, and conclusion, outline and paragraphs, and introduction and body. Codes that were given but not in combination with anything else include arguments, paragraphs, introduction, and outline (Figures IV.30 and IV.40).

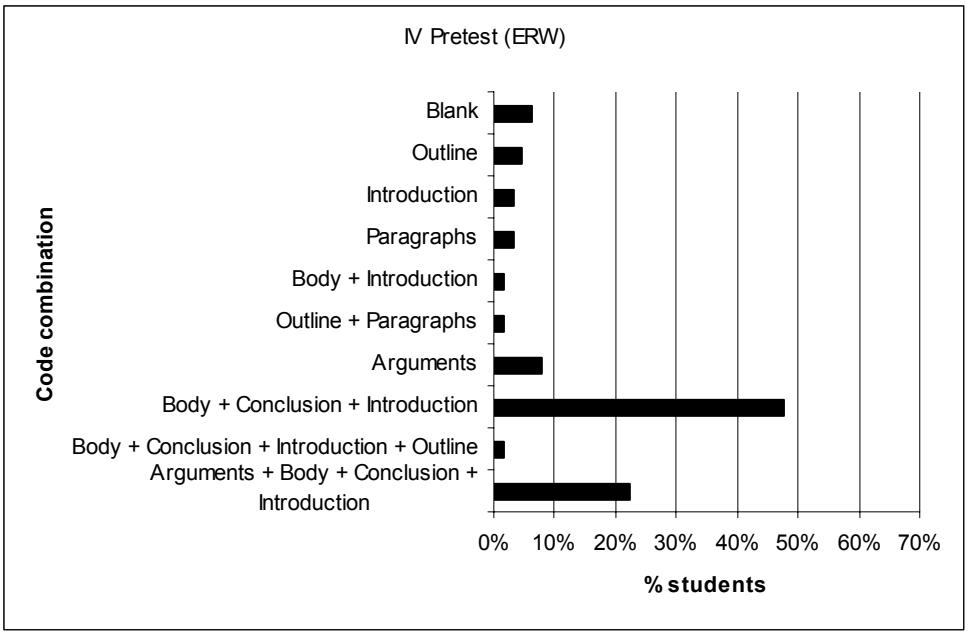

Figure IV.40. Code combinations per student for Question 3 for pretests in setting IV (Effective Reading and Writing).

For the setting IV posttests from Effective Reading and Writing, there was an increase in the percentage of answers that were coded as introduction, body, and conclusion relative to the pretests from this same group. The percentage of answers that were coded as argument remained about the same, while the percentage of students that failed to respond or indicated that they used an outline in the structure of an essay decreased. No answers were categorized as topic or paragraphs (Figures IV.39 and IV.41).

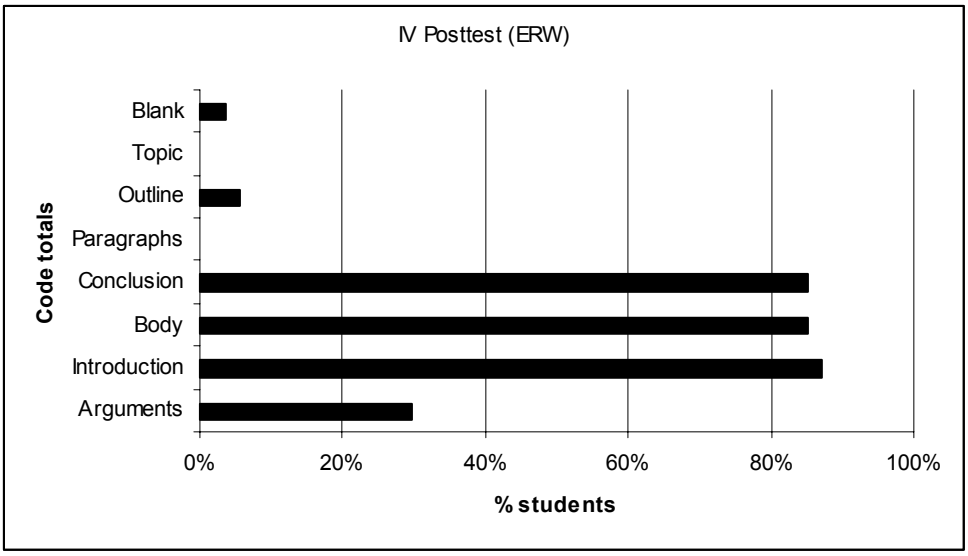

Figure IV.41. Code totals per student for Question 3 for posttests in setting IV (Effective Reading and Writing).

Compared to the pretests of this group, there was an increase in the frequency of the occurrence of introduction, body, and conclusion in combination. The percentage of students who replied with a combination of arguments, introduction, body, and conclusion also increased slightly. Arguments, introduction, and outline occurred in small percentages by themselves (Figures IV.40 and IV.42).

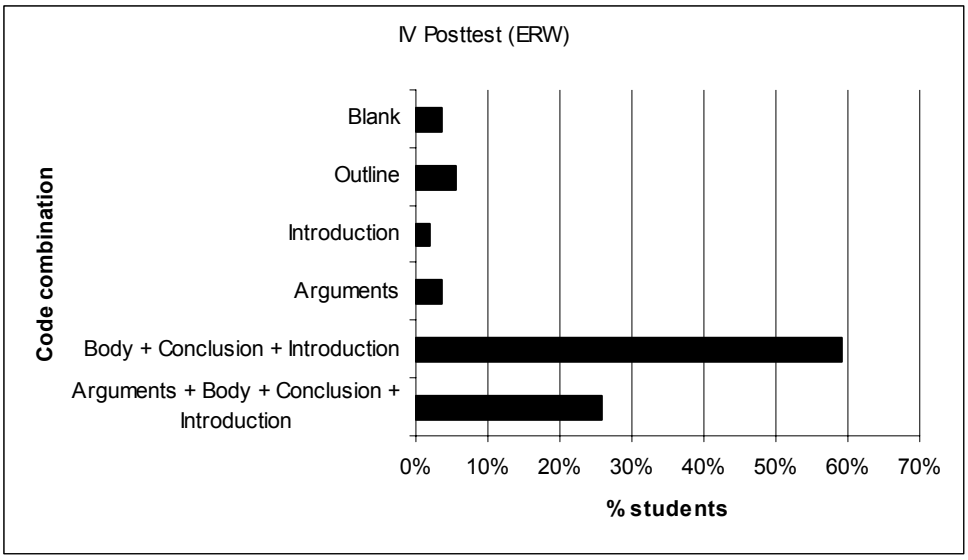

Figure IV.42. Code combinations per student for Question 3 for posttests in setting IV (Effective Reading and Writing).

The strongest answer for the question on how to structure an essay was determined to be a combination of the use of arguments, an introduction, a body, and a conclusion. At the beginning of the course, a large percentage of students appeared to understand that they needed to use an introduction, a body, and a conclusion. At the end of the course, across all settings, there was a general increase in the percentage of students who said they now used arguments as well an introduction, a body, and a conclusion when structuring an essay. The greatest increase in the percentage of students whose answers were categorized as claiming to use an introduction, a body, and a conclusion, although not necessarily in combination with each other, occurred in the blended settings (Settings III and IV), while the greatest increase in the percentage of students who said they used arguments occurred in the traditional non-socioconstructive, non-blended setting (Setting I) and the socioconstructive, blended setting (Setting IV) of Academic Writing Skills; however, the other settings in this course

were not far behind. The Effective Reading and Writing students, who were also in the socioconstructive, blended setting (Setting IV), appeared to start off with a higher percentage of responses that were categorized using the arguments code, and although the use of introduction, body, and conclusion to code their responses increased, the use of arguments did not.

d. Question 4 – Writing an Introduction

The fourth question asked students what they included in an introduction. Answers to this question were coded into one or more of the following categories:

1. **Audience**: The student states or implies that he/she addresses the reader in the introduction or tries to capture the attention of the reader (e.g. hook or attention grabber). This is usually to lead up to the topic and attract the interest of the reader.
2. **Examples**: The student states or implies that he/she includes examples in an introduction. This is not an outline of the ideas to be presented in the body of the essay. It is rather some examples of the importance of the topic.
3. **Main idea**: The student states or implies that he/she includes the main idea or an opinion on the topic in the introduction. This usually implies the use of a thesis statement. The student must indicate that he/she has an opinion.
4. **Outline**: The student states or implies the use of an outline of the essay or the arguments/ideas that will be presented in the body in

his/her introduction. This could be a list of the supporting details or the reason for his/her opinion.

5. **Topic**: The student indicates that he/she states the topic of the essay in the introduction of the essay. This should not be confused with the main idea as the point of view on the topic is not given. This simply implies that the student gives background information on the topic or talks about the topic in general without attempting to generate the interest of the reader or without giving examples or an opinion.

None of these responses were incorrect; however, some were obviously considered to be more important that others, especially if combined with other responses. For instance, a response that indicated that the student introduced the topic but also had a thesis statement and an outline of his/her arguments was considered to be a much stronger response than one that simply stated that the student only introduced the topic. One student said, in an example of the former, 'Introduction includes: 1) Background info 2) thesis statement 3) overview of how one will proceed' (Subject #133). In an example of the latter, one student said he/she included in an introduction, 'The situation in general without giving my point of view' (Subject #30).

In general, there was an increase in the percentage of responses that implied the use of a main idea and, for the most part, an outline in an introduction to an essay over the course of the semester (Figures IV.43, IV.45, IV.47, IV.49, IV.51, IV.53, and IV.55).

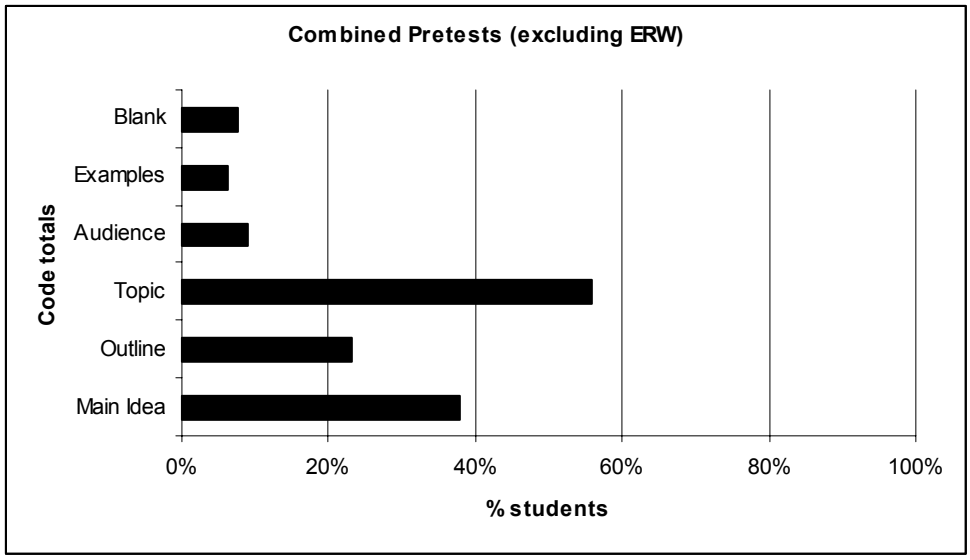

Figure IV.43. Code totals per student for Question 4 for all pretests excluding Effective Reading and Writing.

Across all instructional settings, the tendency to rely solely on the topic to write an introduction decreased, while the use of main idea either by itself or in combination increased (Figures IV.44, IV.46, IV.48, IV.50, IV.52, IV.54, and IV.56).

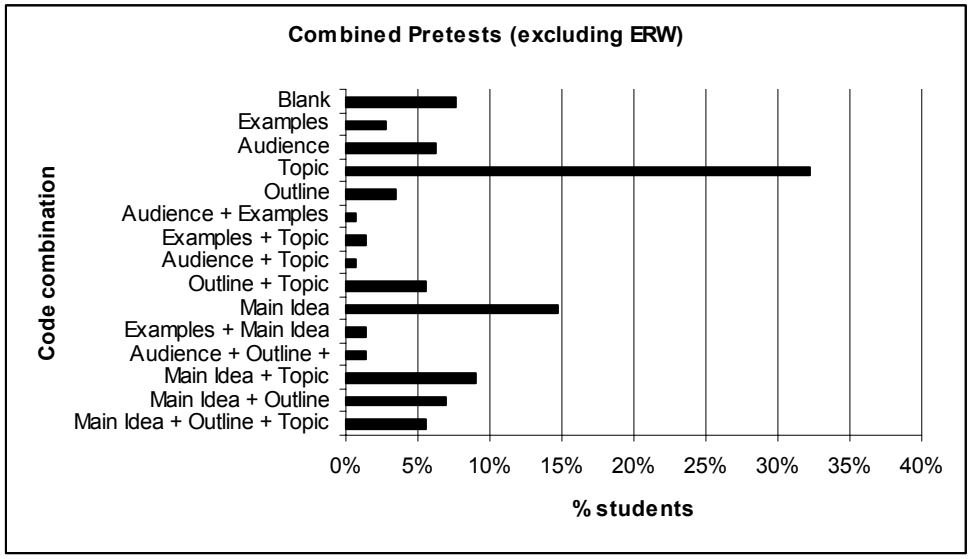

Figure IV.44. Code combinations per student for Question 4 for pretests excluding Effective Reading and Writing.

In comparison to the pretests, the students in setting I at the end of the course tended to rely more on a main idea and an outline of their ideas and less on the topic, the audience, and examples in their introductions (Figures IV.43 and IV.45).

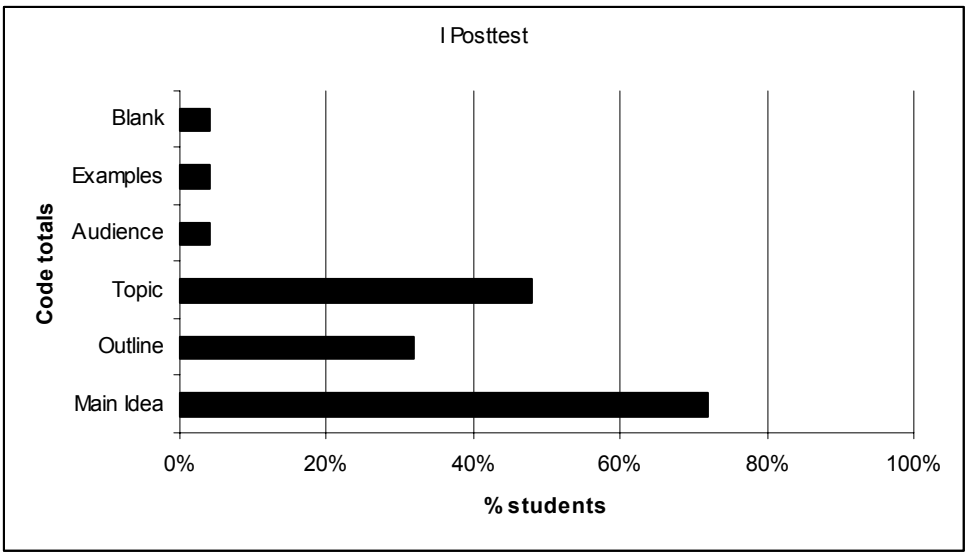

Figure IV.45. Code totals per student for Question 4 for posttests in setting I.

Main idea by itself rather than topic by itself was the most frequent response in this group at the end of the course followed by main idea combined with topic and main idea combined with outline and topic. These combinations of responses all increased in percentage relative to the pretests (Figures IV.44 and IV.46).

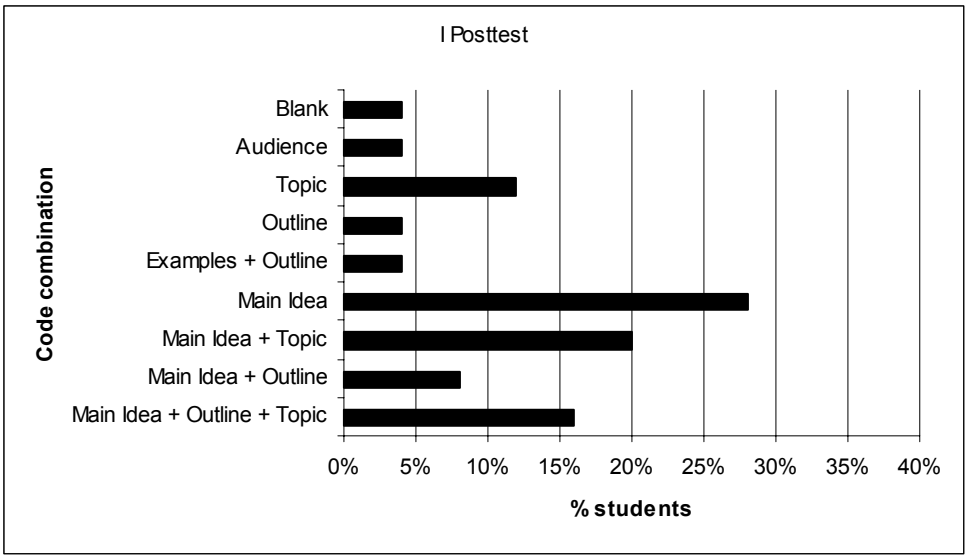

Figure IV.46. Code combinations per student for Question 4 for posttests in setting I.

For setting II, there is also an increase in the percentage of responses that suggested the use of a main idea and an outline in an introduction and a decrease in the percentage of those that suggested the use of the topic. The percentage of those that used examples remained about the same, while no students failed to respond or indicated that they addressed the audience (Figures IV.43 and IV.47).

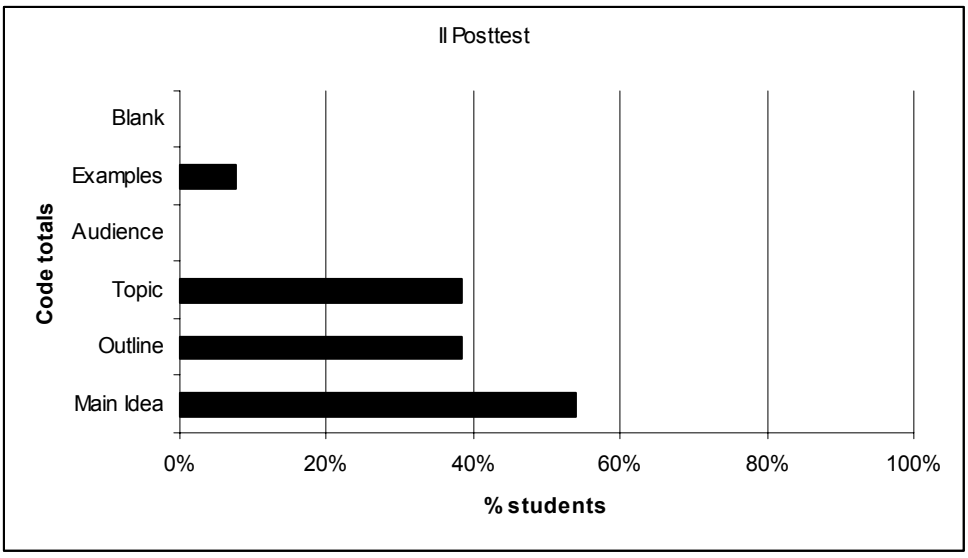

Figure IV.47. Code totals per student for Question 4 for posttests in setting II.

The most frequent responses in setting II were main idea, topic, and outline by themselves, with main idea replacing topic as the most frequent answer. Different combinations of all three of these categories or just two were also present; however, these all occurred in lower percentages relative to the pretests except outline combined with topic (Figures IV.44 and IV.48).

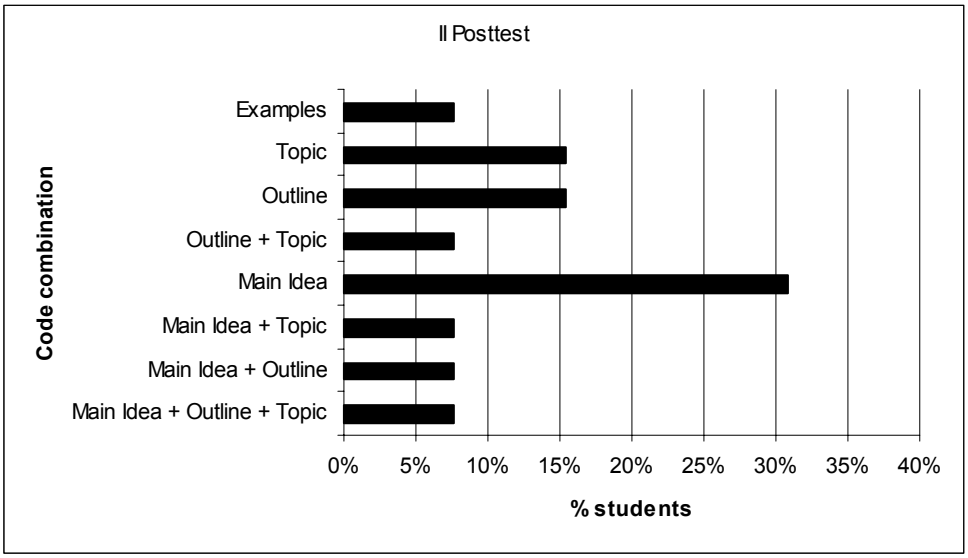

Figure IV.48. Code combinations per student for Question 4 for posttests in setting II.

In setting III, there is an increase in the percentage of responses that were coded as main idea and outline and a decrease in the percentage that were coded as topic and audience. No students failed to respond to the question, while no answers were categorized as examples (Figures IV.43 and IV.49).

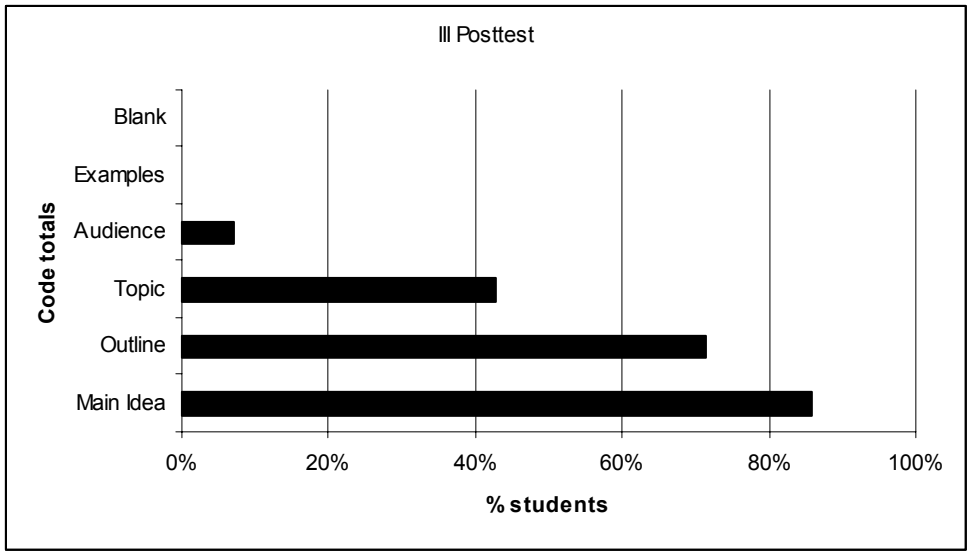

Figure IV.49. Code totals per student for Question 4 for posttests in setting III.

The two most important combinations for setting III include main idea, outline, and topic, as well as main idea and outline. These are followed by main idea and topic and main idea by itself. No student in this group indicated that they used only the topic in the introduction, which was the most frequent response in the pretests (Figures IV.44 and IV.50).

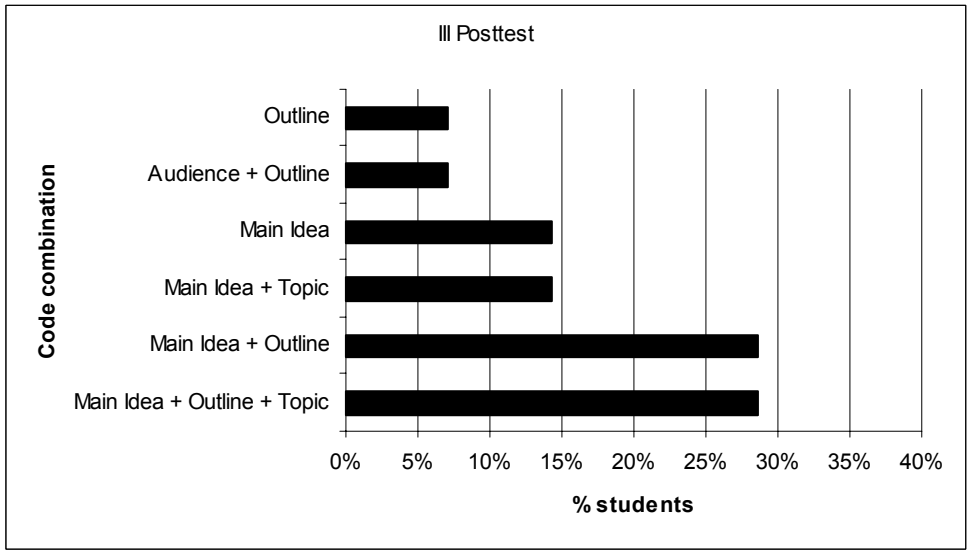

Figure IV.50. Code combinations per student for Question 4 for posttests in setting III.

For setting IV, the Academic Writing Skills group, there was an increase in the percentage of students who indicated that they include a main idea, an outline, and a topic in an introduction to an essay. The increase in the percentage of responses that were coded as main idea was much greater than the increase in the percentage of those that were coded as topic. The percentage of responses that were categorized as audience decreased, while none of the responses were categorized as examples (Figures IV.43 and IV.51).

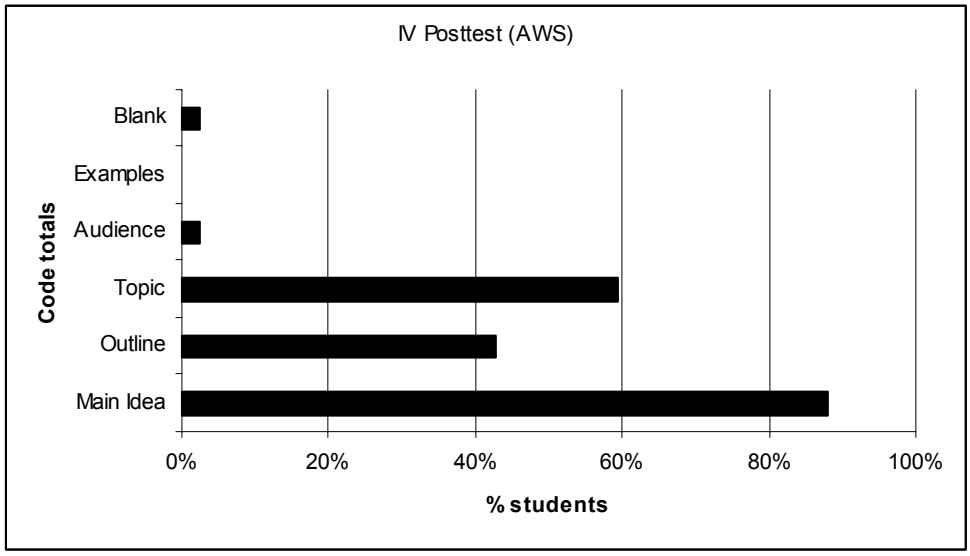

Figure IV.51. Code totals per student for Question 4 for posttests in setting IV (Academic Writing Skills).

For this group, the most frequent responses involved either only a main idea, a main idea, an outline, and the topic, or a main idea and the topic. The percentage of those that responded that they included only the topic in their introduction increased greatly relative to the pretests (Figures IV.44 and IV.52).

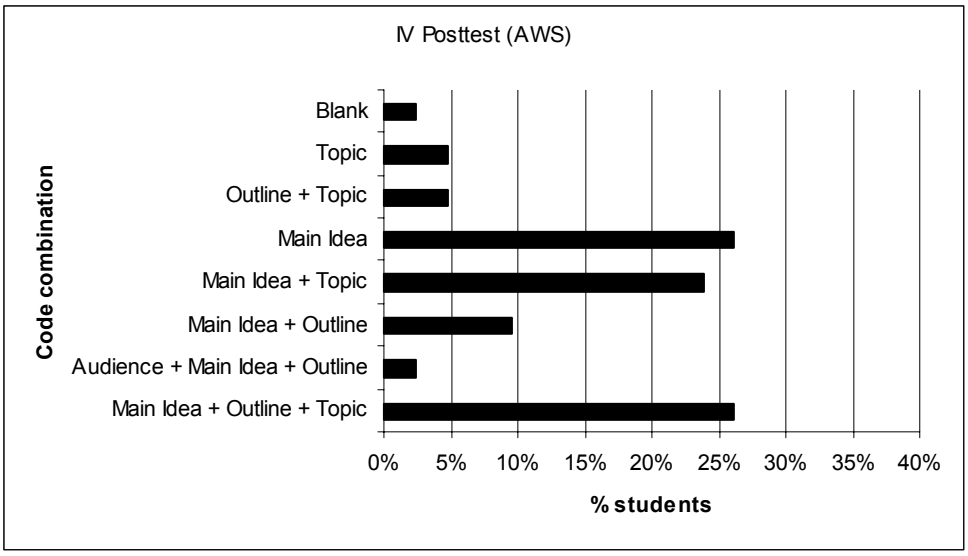

Figure IV.52. Code combinations per student for Question 4 for posttests in setting IV (Academic Writing Skills).

Relative to the Academic Writing Skills pretests, there was an increase in the occurrence of the codes main idea, outline, and topic and a decrease in the occurrence of audience and examples in the Effective Reading and Writing pretests. The increase in the use of main idea and outline was greater than the increase in topic (Figures IV.43 and IV.53).

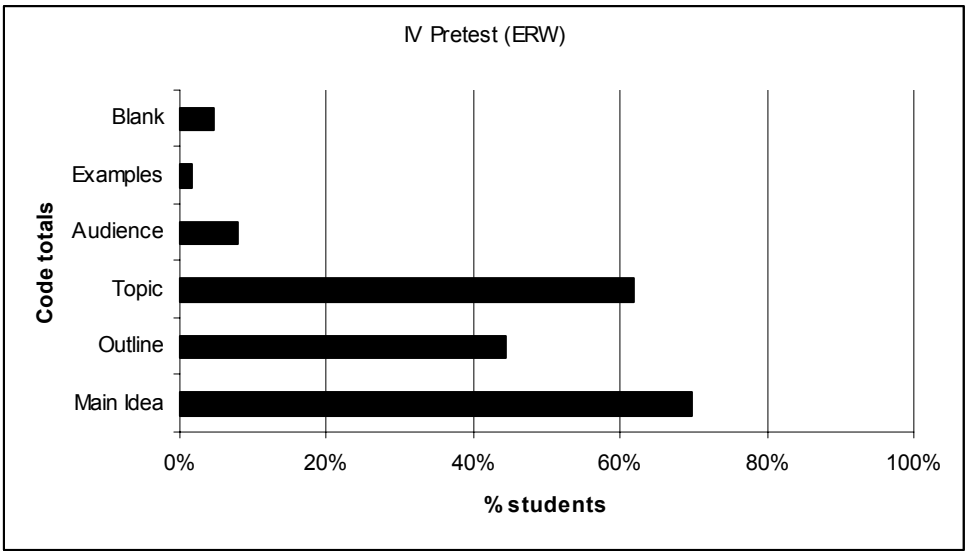

Figure IV.53. Code totals per student for Question 4 for pretests in setting IV (Effective Reading and Writing).

For the Effective Reading and Writing pretests, the most frequent answers combined main idea and topic, main idea, outline, and topic, and main idea and outline. Many students still included topic by itself in their introductions, but the percentage of students who did so was not nearly as high as in the other pretests (Figures IV.44 and IV.54).

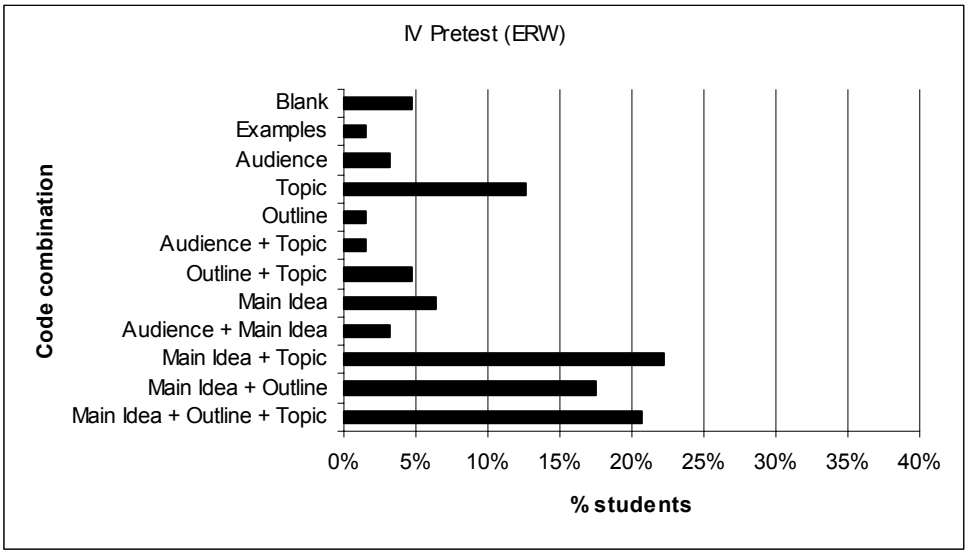

Figure IV.54. Code combinations per student for Question 4 for pretests in setting IV (Effective Reading and Writing).

Compared to the pretests of this group, there was an increase in the percentage of students who indicated that a main idea, an outline, and the audience are important in the introduction in an essay, while there was a decrease in the percentage of students who indicated that the topic is important (Figures IV.53 and IV.55).

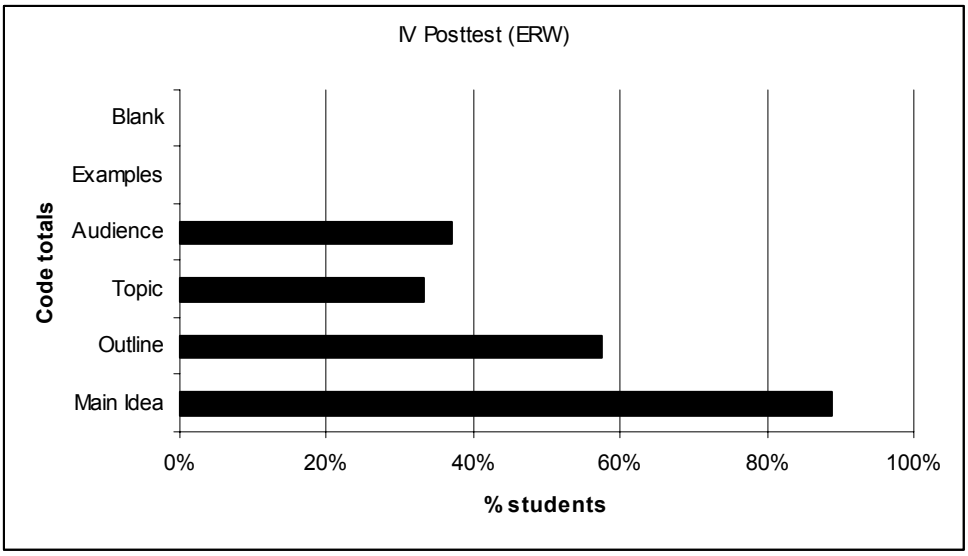

Figure IV.55. Code totals per student for Question 4 for posttests in setting IV (Effective Reading and Writing).

For Effective Reading and Writing, at the end of the course, the most frequently occurring combinations of answers for this question included audience and main idea, main idea, outline, and topic, and main idea and outline. Audience, main idea, and outline, as well as main idea and topic and main idea by itself were also important. Relative to the pretests of this group, there was an increase in the occurrence of audience in combination with other codes, while topic ceased to occur by itself (Figures IV.54 and IV.56).

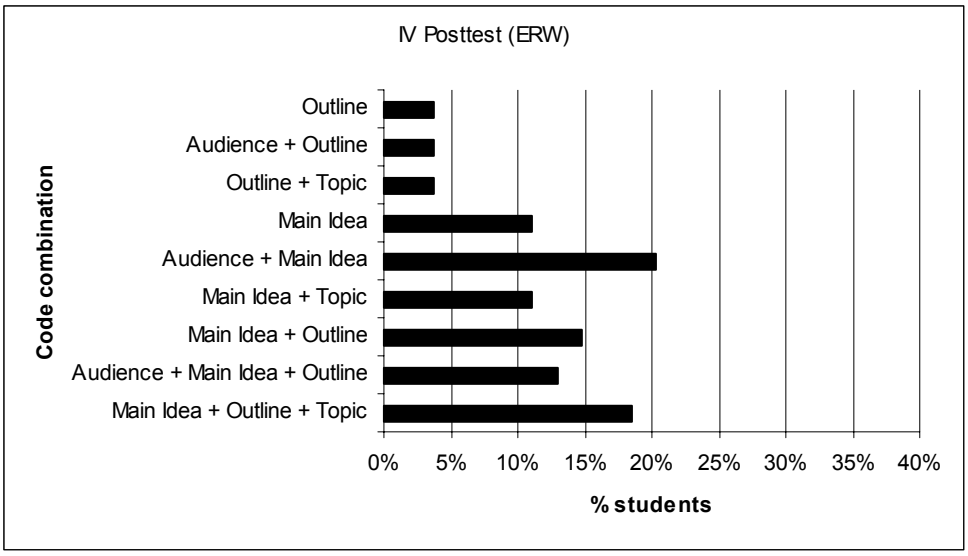

Figure IV.56. Code combinations per student for Question 4 for posttests in setting IV (Effective Reading and Writing).

In an introduction to an essay, students at this level are typically taught that they should start first with a phrase that should attract the attention of their readers, then they should have a general introduction to their topic with background information. This could include examples, but this is not entirely necessary. Afterwards and most importantly, they should have a thesis statement that includes their main idea and point of view. An outline of the arguments to be made in the subsequent paragraphs should follow. Therefore, if students are asked what they include in an introduction, the strongest possible answer is a combination of all the codes. Even though none of the answers that were given were entirely wrong, certain responses are determined to be stronger than others; the presence of a main idea was the most important, followed by an outline, an introduction to the topic, generating the interest of the reader, and using examples of the topic.

At the beginning of both Academic Writing Skills and Effective Reading and Writing, most students appeared to understand that an introduction to the topic is necessary. In Effective Reading and Writing, most students also understood the need for a main idea. At the end of each course, there was an increase in both courses and all settings in the percentage of students that indicated that they included a main idea and an outline. This increase was most apparent in the blended settings (Settings III and IV). When combinations of codes are looked at, the students in these two settings are also the ones that most frequently combined main idea, outline, and topic, which was determined to be the strongest response given to this question by these subjects. More students in Effective Reading and Writing also appeared to understand the need to attract the attention of the reader.

e. Question 5 – What Makes a "Good" Essay

The fifth question asked students what they felt makes an essay "good." Answers to this question were coded into one or more of the following categories:

1. **Arguments / support**: The student states or implies that the quality of the arguments, ideas, and examples are what make an essay "good."
2. **Clarity of expression**: The student states or implies that an essay is good if the expression of the essay is clear, the ideas are coherent, and the writer stays on topic and avoids repetition.
3. **Conclusion**: The student states or implies that an essay is good if it has a strong conclusion.

4. **Content**: The student states or implies that an essay is good if the information or content included is good. This can include anything that states that all aspects of the topic are covered. This shows no reference to arguments, ideas, or examples.
5. **Creativity**: The student states or implies that an essay is good if it demonstrates creativity or originality on the part of the author.
6. **Grammar / vocabulary**: The student states or implies that an essay is good if the grammar, spelling, sentence structure, and/or vocabulary are good.
7. **Introduction**: The student states or implies that an essay is good if it has a strong introduction. This has no specific reference to a main idea or a thesis statement.
8. **Length**: The student states or implies that an essay is good if it is not too long or if it is not too short.
9. **Sources**: The student states or implies that an essay is good if the quality of the sources is good or if it uses a lot of sources. Sources include but are not limited to newspaper articles, internet resources, and books. This is mainly about the number of sources or the quality of the sources and not about the content of the essay.
10. **Structure**: The student states or implies that proper essay structure and organization are what make an essay good.

11. **Thesis statement**: The student states or implies that an essay is good if it has a strong thesis statement. This includes references to a main idea but not to the introduction in its entirety.
12. **Topic**: The student states or implies that an essay is good if it has a good, interesting, or exciting topic. This contains no reference to the actual content of the essay.
13. **Transitional words**: The student states or implies that an essay is good if it has transitional words that link between ideas, sentences, or paragraphs.

Obviously, there is no single answer to this question, but some answers are stronger than others. An example of a stronger answer is one that suggests that clarity, good arguments, and structure make a good essay: 'Clear, easy to read. Logical development. New idea, point of view' (Subject #111). Answering that an interesting topic is what makes an essay good is an example of a weaker response: 'If the subject is good' (Subject #8). This question generated the most varied response out of all the questions; therefore, it may be difficult to compare between settings.

In the pretests for Academic Writing Skills, the most frequent responses indicated that good arguments, clarity, and good grammar and vocabulary are important in a good essay. In the Effective Reading and Writing pretests, structure is also important. In the posttests, usually one or more of these increased in percentage in the responses for this question (Figures IV.57, IV.59, IV.61, IV.63, IV.65, IV.67, and IV.69).

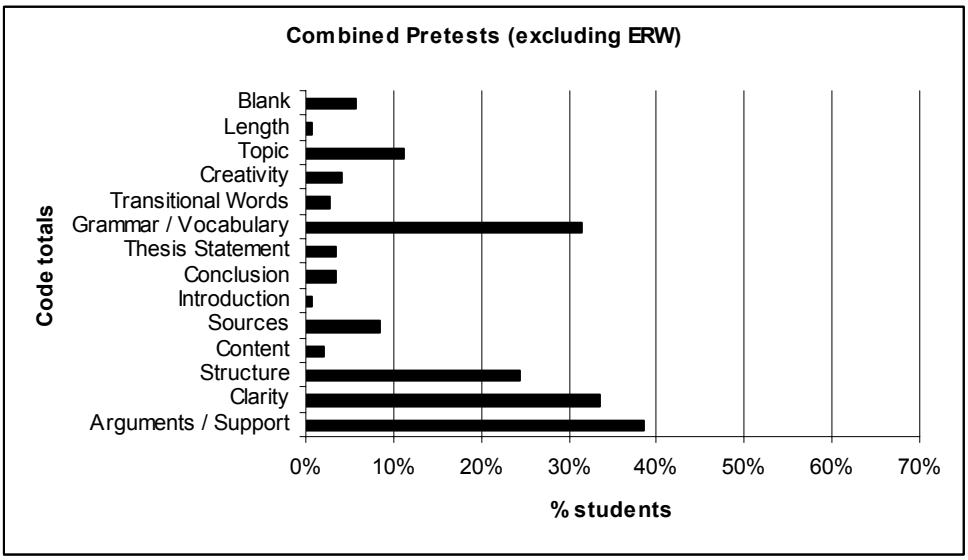

Figure IV.57. Code totals per student for Question 5 for all pretests excluding Effective Reading and Writing.

When total responses are looked at, variability is especially evident. As group size increases, the number of different combinations of responses also increases. In the Academic Writing Skills pretests, with 143 students, grammar and vocabulary, arguments and support, and clarity of expression by themselves were the most frequently occurring responses, while in the Effective Reading and Writing pretests, arguments and support combined with clarity, and clarity and content by themselves are most frequent. For the posttests, all settings were very different in their combinations of responses; therefore, it is difficult to say how they changed in general relative to the pretests (Figures IV.58, IV.60, IV.62, IV.64, IV.66, IV.68, and IV.70).

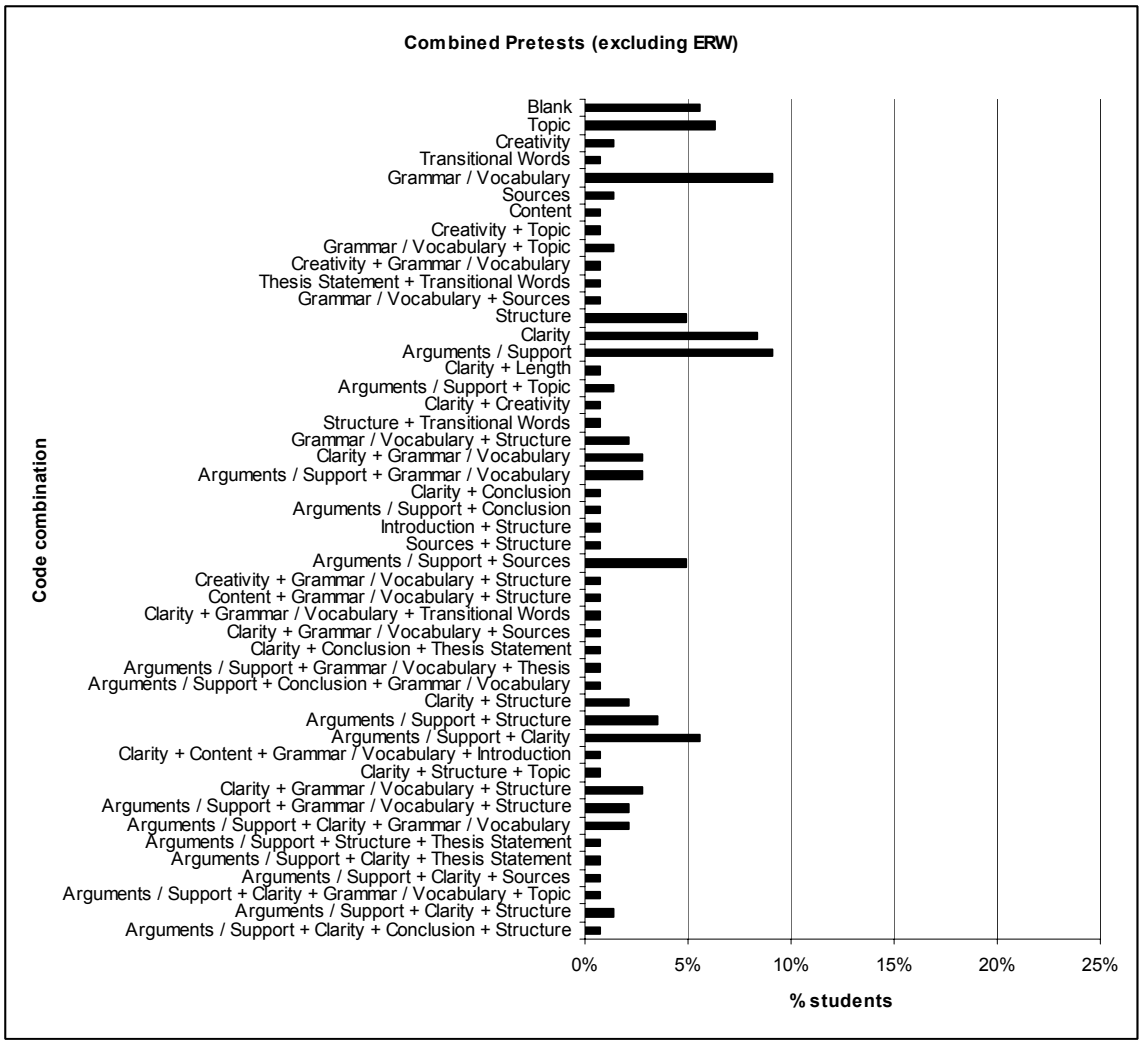

Figure IV.58. Code combinations per student for Question 5 for pretests excluding Effective Reading and Writing.

For the setting I students, at the end of the course, good grammar and vocabulary were by far the most important elements in a good essay, increasing relative to the pretests. Structure, clarity, and arguments were also important, with only the percentage of responses indicating structure as being important increasing relative to the pretests (Figures IV.57 and IV.59).

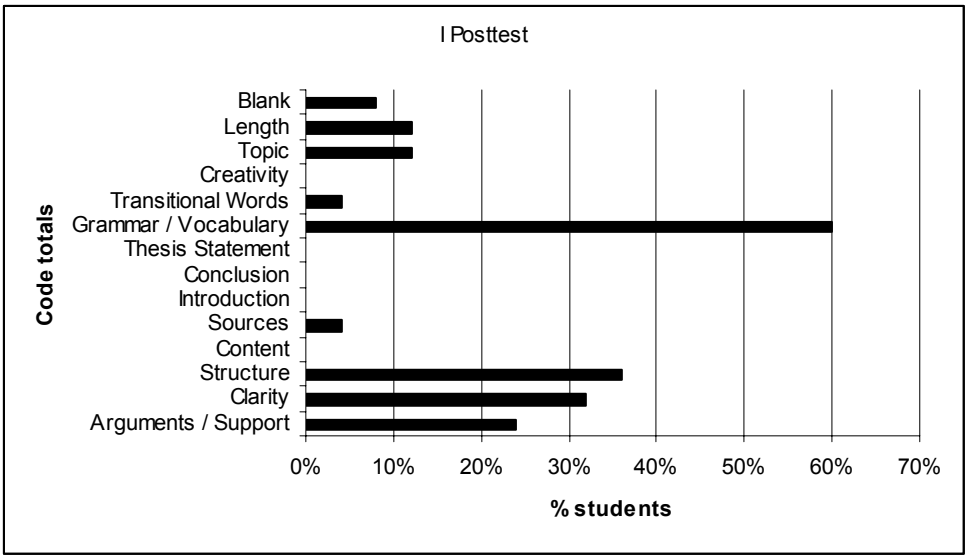

Figure IV.59. Code totals per student for Question 5 for posttests in setting I.

With 25 students answering the questionnaire at the end of the course, there were 15 different combinations of responses. Those with the highest percentage included the category grammar and vocabulary by itself, arguments and support combined with structure, and clarity of expression combined with grammar and vocabulary and structure. Compared to the pretests, there appeared to be a greater emphasis on structure when it comes to writing a good essay (Figures IV.58 and IV.60).

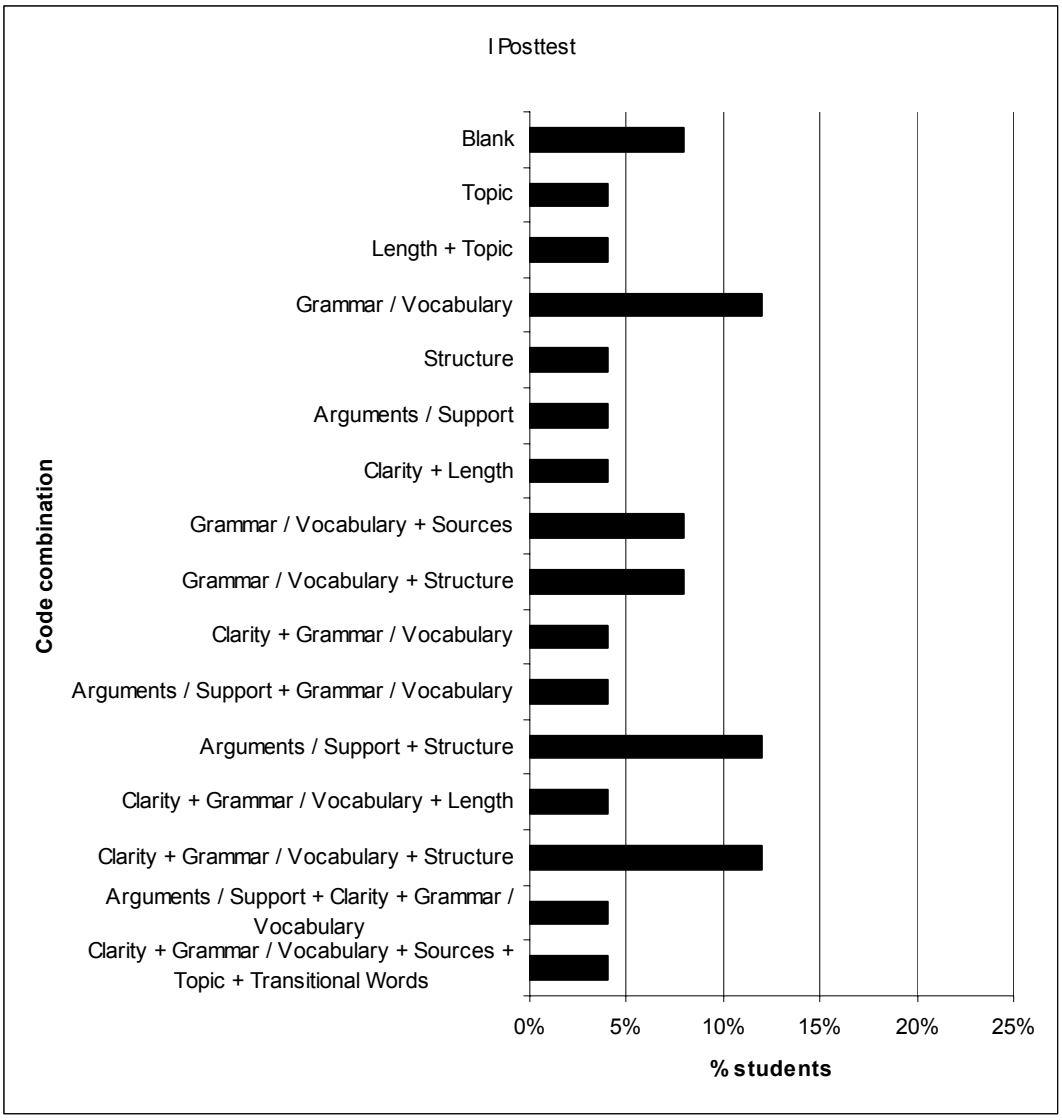

Figure IV.60. Code combinations per student for Question 5 for posttests in setting I.

In the setting II postests, clarity and arguments and support were the most important in a good essay, followed by grammar and vocabulary. These all increased in their percentage of occurrence in student responses when compared to the pretests (Figures IV.57 and IV.61).

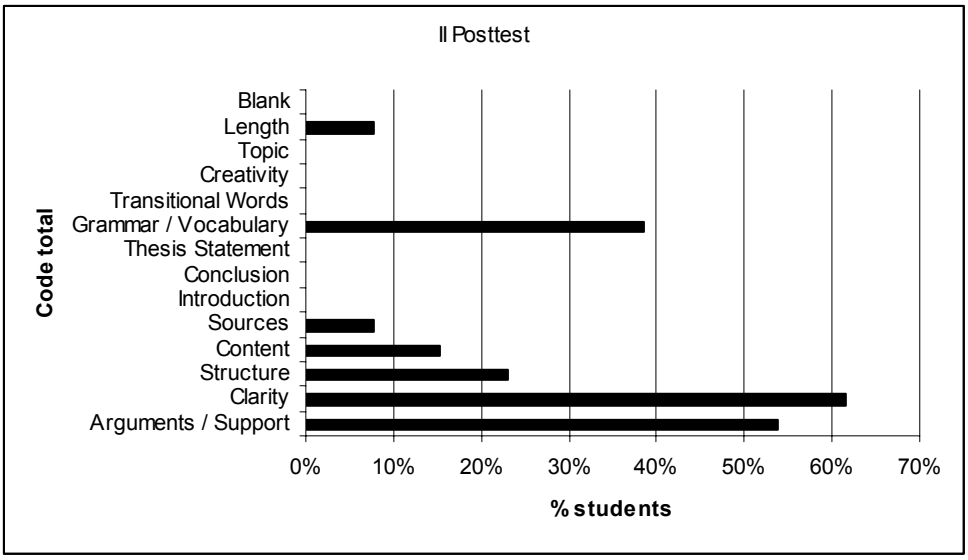

Figure IV.61. Code totals per student for Question 5 for posttests in setting II.

In setting II, there were only 13 students who completed the questionnaire at the end of the course, giving 11 different responses. This makes the responses from this group difficult to compare to the pretests, which has almost 50 different combinations of responses. The only two combinations that occurred more than once were clarity by itself and arguments and support combined with clarity and grammar and vocabulary. Five of the other combinations included arguments and support as a category (Figures IV.58 and IV.62).

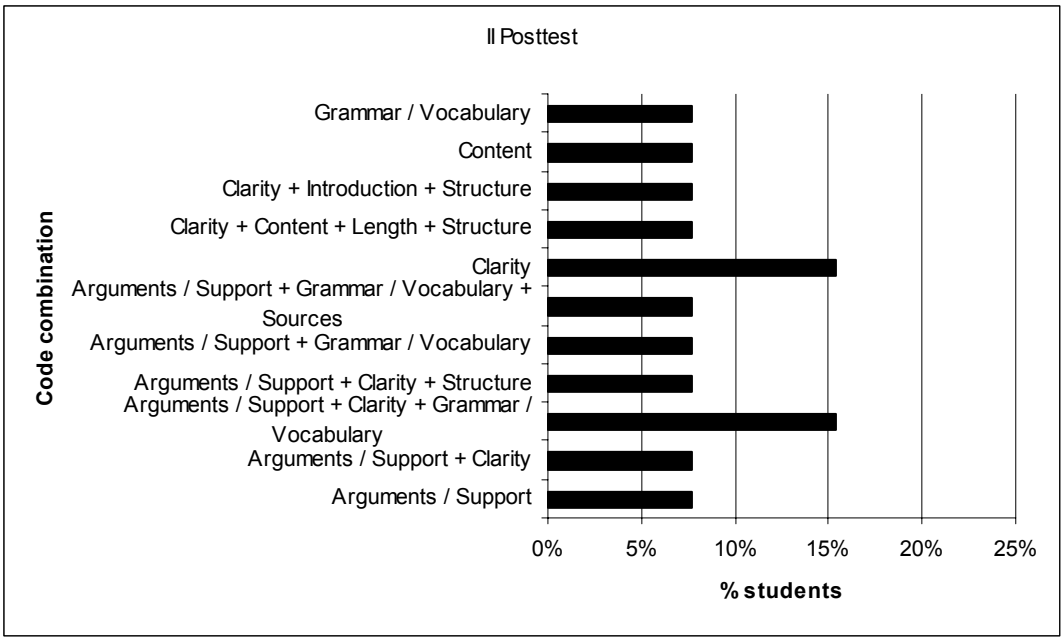

Figure IV.62. Code combinations per student for Question 5 for posttests in setting II.

Structure and arguments and support, followed by grammar and vocabulary, were the most important elements in a good essay for students who wrote the posttest in setting III. These categories increased in percentage relative to the pretests (Figures IV.57 and IV.63).

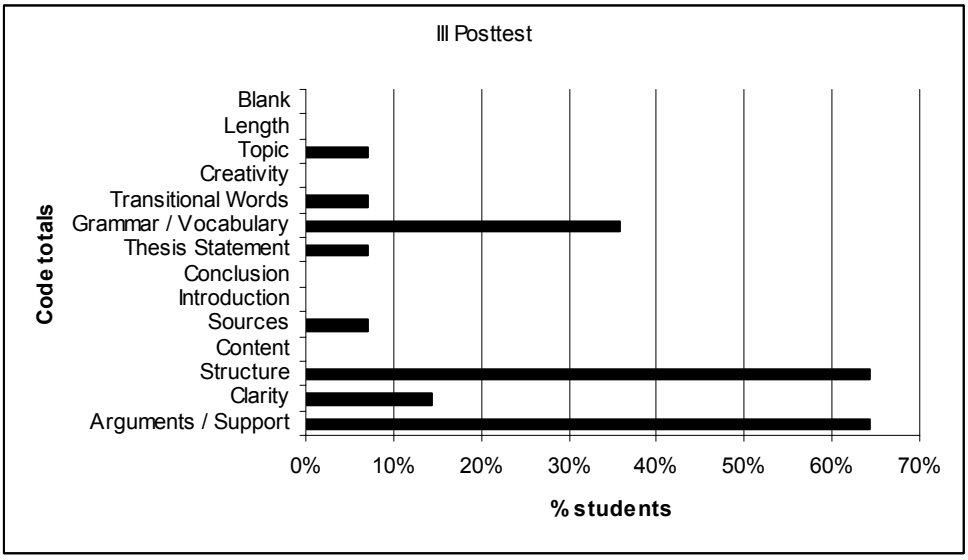

Figure IV.63. Code totals per student for Question 5 for posttests in setting III.

Only 14 students completed the posttest for setting III, with 11 different combinations of responses. Structure by itself and combined with arguments and support were the only two combinations that were used in more than one response. Arguments and support as a category was also used in 7 other combinations, while structure occurred in 4 (Figures IV. 58 and IV.64).

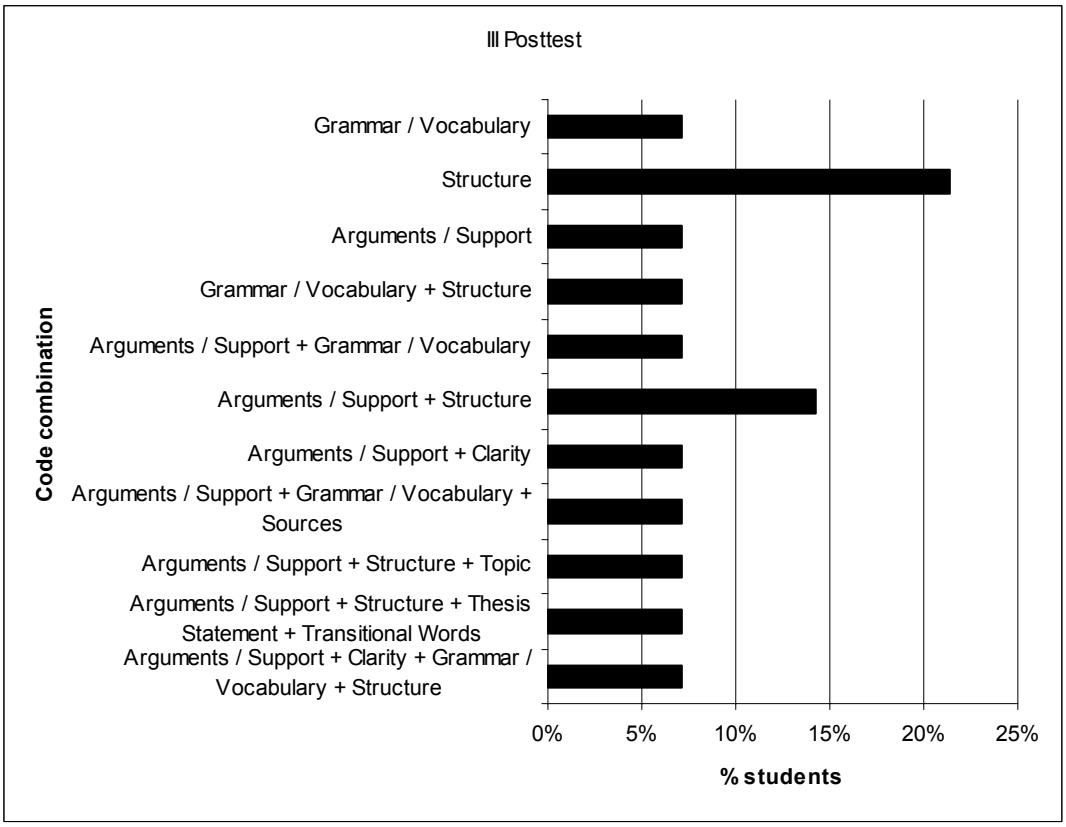

Figure IV.64. Code combinations per student for Question 5 for posttests in setting III.

For the setting IV Academic Writing Skills students at the end of the course, clarity, followed by structure and arguments and support were the most important aspects in writing a good essay. These all increased in percentage relative to the pretests, while the importance of grammar and vocabulary decreased (Figures IV.57 and IV.65).

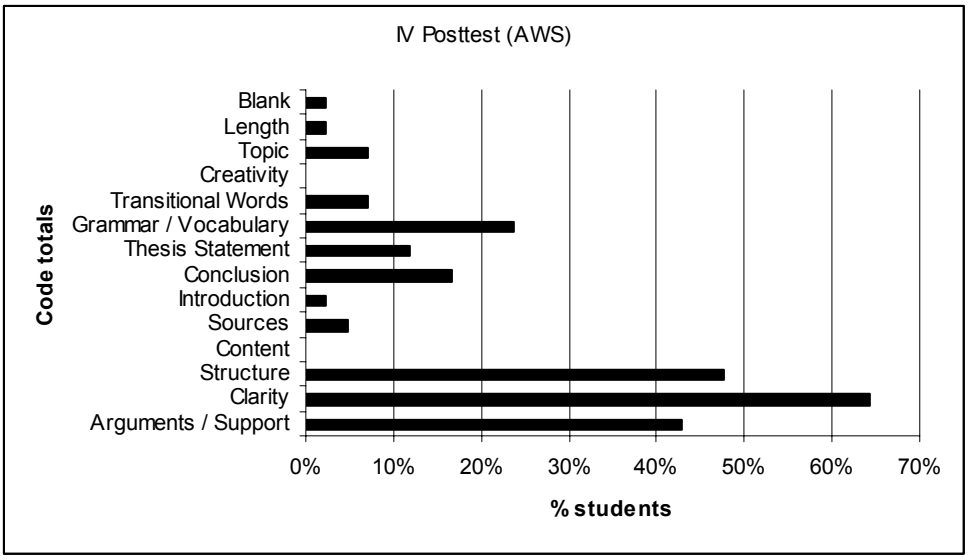

Figure IV.65. Code totals per student for Question 5 for posttests in setting IV (Academic Writing Skills).

With 42 students, 26 different combinations of responses to Question 5 were given at the end of the course. Clarity combined with structure was the most frequently occurring combination, followed by arguments and support and clarity either by themselves or combined together. Clarity as a category occurred in 12 other combinations of responses, while structure occurred in 11 and arguments and support occurred in 10 (Figures IV.58 and IV.66).

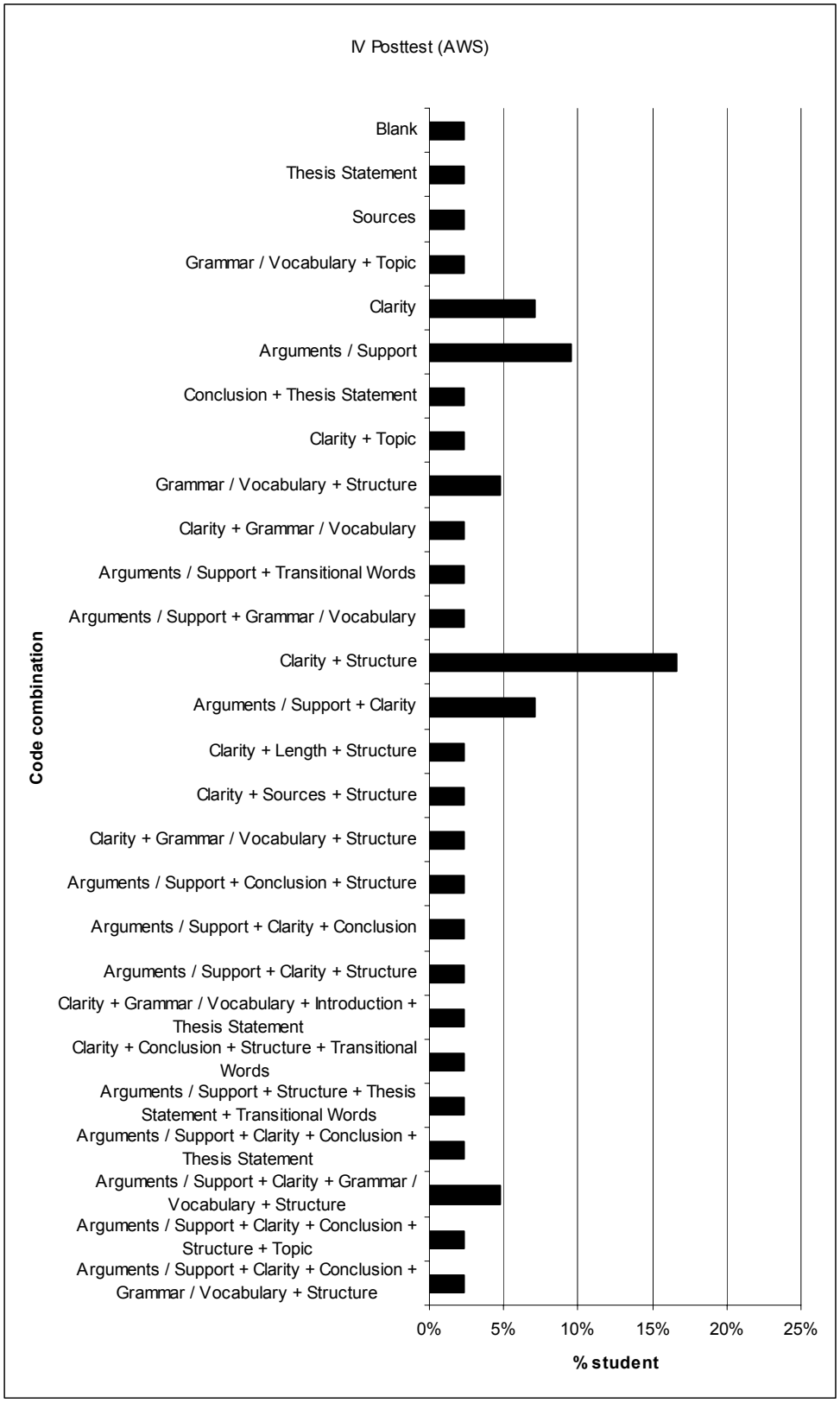

Figure IV.66. Code combinations per student for Question 5 for posttests in setting IV (Academic Writing Skills).

For Effective Reading and Writing students, all in setting IV, at the beginning of the course, arguments and support, as well as structure, were most important when writing a good essay; these increased relative to the Academic Writing Skills pretests. Other notable increases relative to the Academic Writing Skills pretests include an increase in the percentage of responses that indicated that content and a thesis statement were important in a good essay. Clarity, grammar and vocabulary, and sources all decreased in their percentage of occurrence as categories (Figures IV.57 and IV.67).

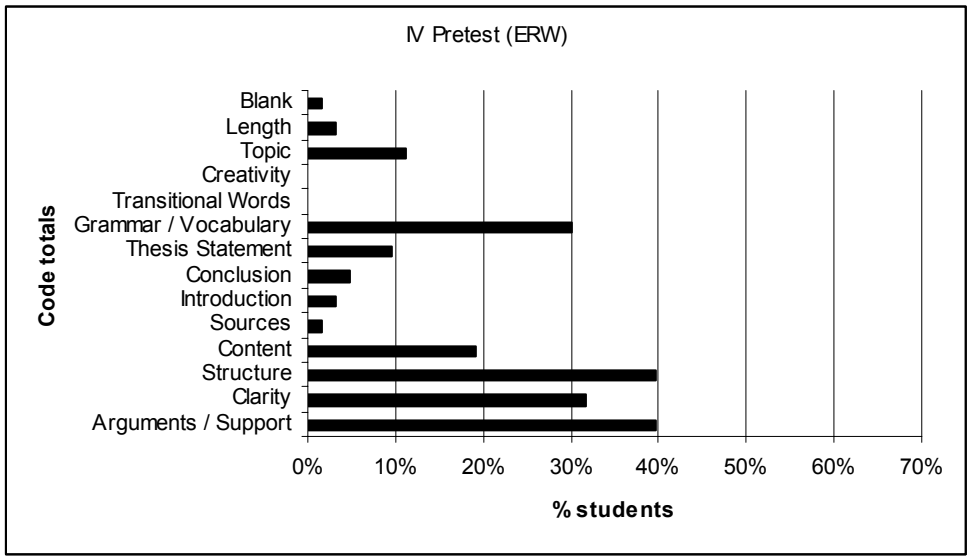

Figure IV.67. Code totals per student for Question 5 for pretests in setting IV (Effective Reading and Writing).

Given the number of students, the number of categories, and the many possible combinations, it is difficult to compare the different combinations of categories for this group with the Academic Writing Skills group. With 63 students, there were 30 different combinations of responses. The three most frequently occurring were clarity by itself and combined with arguments and

support, followed by content by itself. Arguments and support occurred in 12 different combinations including in the aforementioned one, clarity occurred in 8 different combinations, content occurred in 3, and structure, which is not in one of the most frequently occurring combinations, occurred in 13. In the pretests, the category of grammar and vocabulary appears to be more important to the Academic Writing Skills group than it was to this group (Figures IV.58 and IV.68).

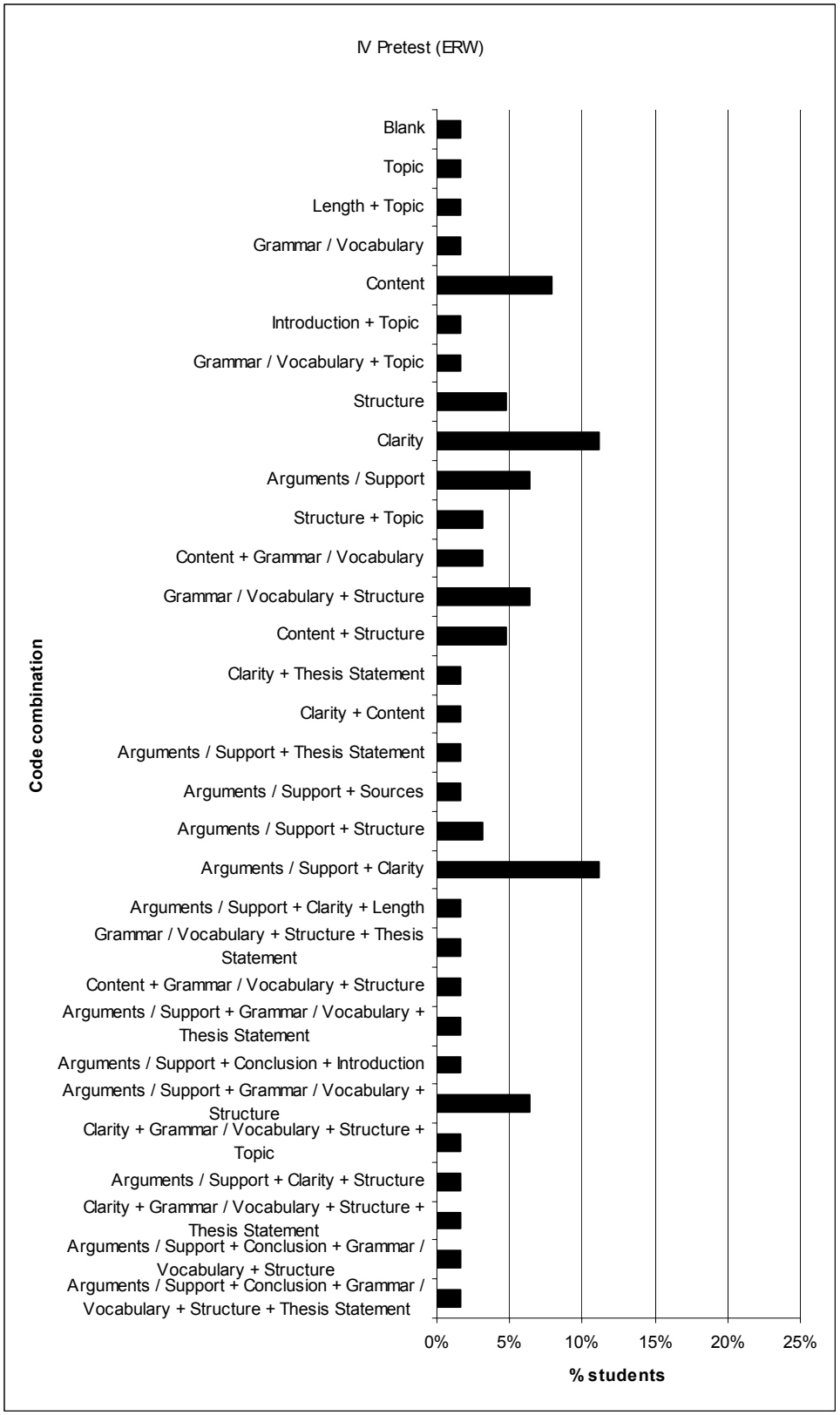

Figure IV.68. Code combinations per student for Question 5 for pretests in setting IV (Effective Reading and Writing).

Compared to the pretests of this group, the posttests showed a percent increase in the importance of arguments and support, structure, and thesis statement, as well as a decrease in the importance of topic, content, grammar and vocabulary, and clarity. Arguments and support, structure, and clarity still remained the most important categories of responses (Figures IV.67 and IV.69).

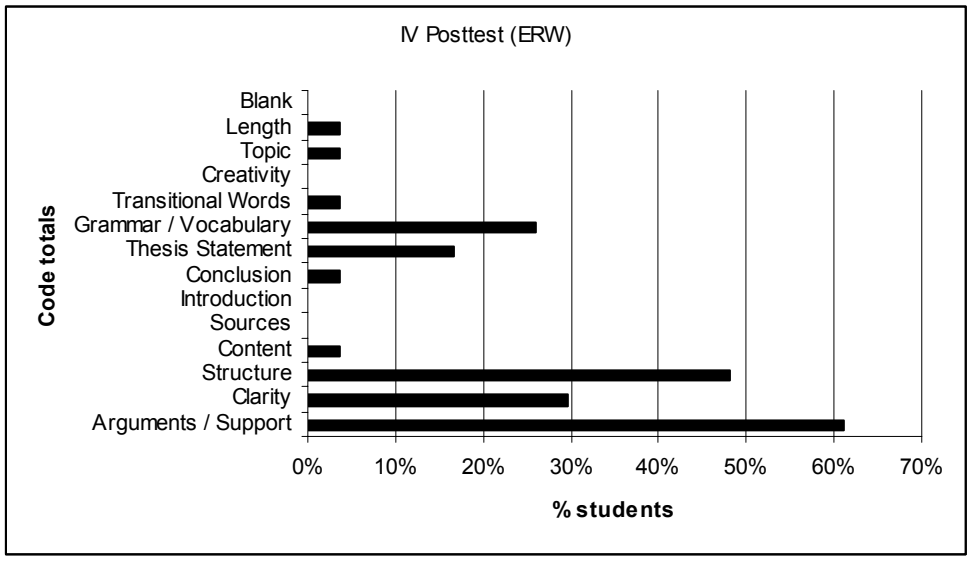

Figure IV.69. Code totals per student for Question 5 for posttests in setting IV (Effective Reading and Writing).

The most frequently occurring combinations out of 27 combinations for this group, which had 54 students at the end of the course, consisted of arguments and support by itself, followed by structure by itself and the two combined. Relative to the pretests, structure appears to have become more important, displacing clarity and content in the most frequently occurring combinations. Arguments and support occurred in 15 different combinations, structure occurred in 13 combinations, and clarity occurred in 10 (Figures IV. 68 and IV.70).

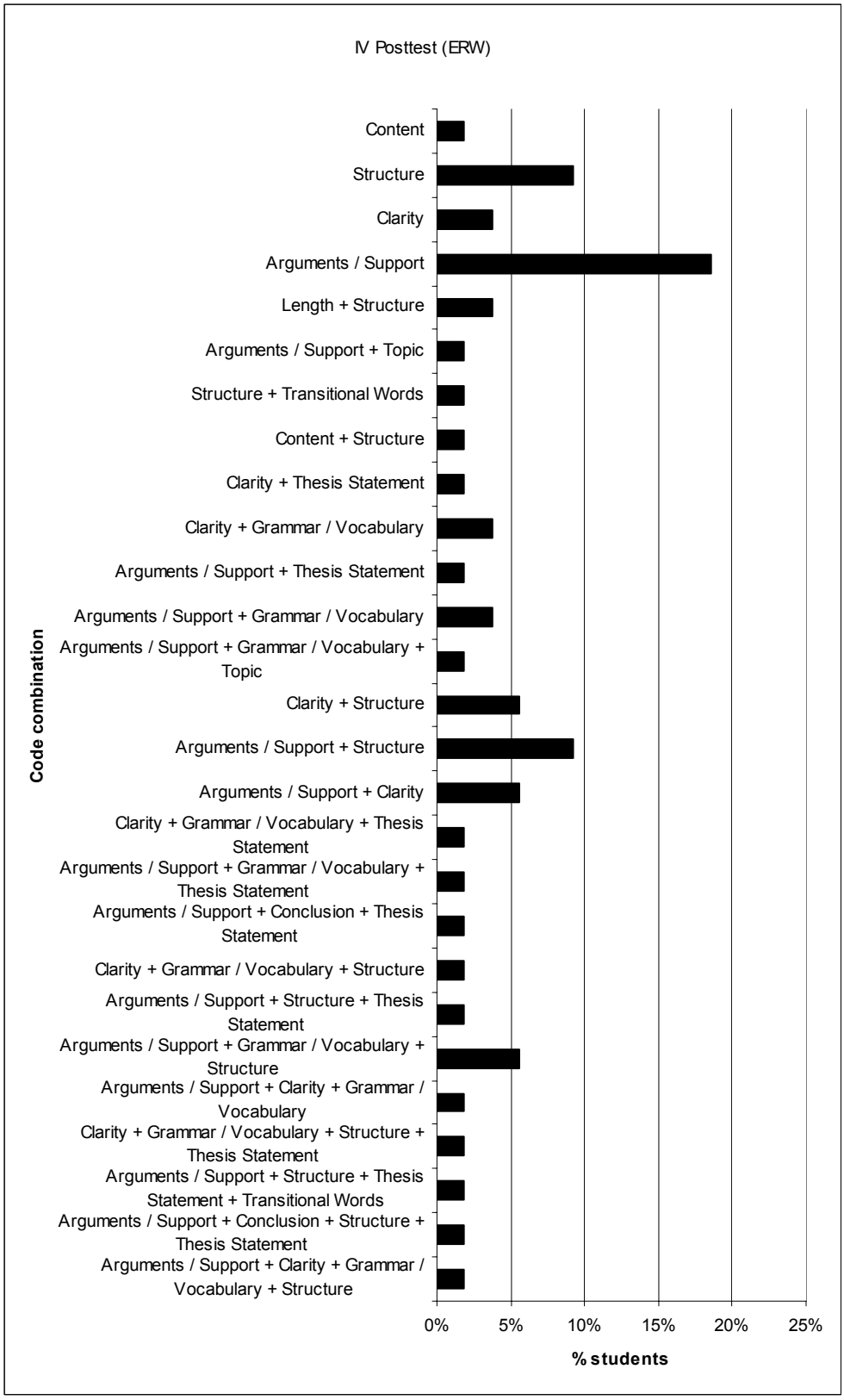

Figure IV.70. Code combinations per student for Question 5 for posttests in setting IV (Effective Reading and Writing).

When asked what makes an essay “good,” none of the answers that were given that fell under the given categories were considered to be wrong. However, some answers and combinations of answers were stronger than others. Since there were many different categories and many different numbers of students, the combinations of answers between different settings are varied and difficult to compare. The categories that were determined to be stronger answers consisted of arguments and support, clarity, and structure. Grammar and vocabulary was another common but weaker response.

At the beginning of both courses, most students appeared to believe that good arguments and support, clarity, and good grammar and vocabulary were important in a good essay. Structure was also important to the students in the more advanced course, Effective Reading and Writing. In the posttests, usually one or more of these increased in their percentage of occurrence. Grammar and vocabulary, as well as clarity, increased in percentage in the non-blended settings (Settings I and II). Structure increased in the blended settings (Settings III and IV). Arguments and support increased in the non-blended, socioconstructive setting (Setting II), the blended, non-socioconstructive setting (Setting III), and the Effective Reading and Writing group of the blended, socioconstructive setting (Setting IV). The greatest increase in grammar and vocabulary occurred in the traditional non-blended, non-socioconstructive setting (Setting I), the greatest increase in clarity occurred in the Academic Writing Skills group of the blended, socioconstructive setting (Setting IV), and the greatest

increase in structure and arguments and support occurred in the blended, non-socioconstructive setting (Setting III).

f. Question 6 – After the Essay

The sixth question asked students what they did after they have completed an essay. Answers to this question were coded into one or more of the following categories:

1. **Correcting**: The student states or implies that after writing an essay he/she rereads his/her essay and corrects mechanical/grammatical errors including sentence structure. There should be no mention of any changes to ideas.
2. **Editing for Meaning**: The student states or implies that after writing an essay he/she edits the text and/or the structure of the text to ensure that it conveys the intended meaning and that the expression and sequence of ideas is clear.
3. **Nothing**: The student states or implies that after writing an essay he/she does nothing or immediately hands in the essay to the teacher.
4. **Peer Editing**: The student states or implies that after writing an essay, he/she asks a peer to read the text and make suggestions regarding grammatical errors and meaning.
5. **Reading Out Loud**: The student states or implies that after writing an essay he/she reflects on what he/she wrote and thinks about whether or not to add more to the essay.

6. **Reflect**: The student states or implies that after writing an essay he/she reflects on what he/she wrote and thinks about whether or not to add more to the essay.
7. **Teacher / TLC staff**: The student states or implies that after writing an essay he/she speaks with his/her teacher or a TLC (The Learning Centre) staff member and asks for feedback.

There is also no single answer to this question, but combining all answers except nothing would be considered the strongest possible answer. The most frequent answer to this question indicated that the student simply read through the essay and corrected his/her mistakes: 'I correct it' (Subject #30). Combining that with editing for meaning is a stronger response: 'Read well to correct mistakes. Also check if ideas are well explained' (Subject #58). A response was considered particularly weak if the student said that upon the completion of an essay, he/she did nothing or immediately handed it in: 'I do nothing' (Subject #31).

In all settings, both at the beginning and at the end of both courses, correcting grammatical and spelling errors was by far the most frequent response. This tended to increase at the end of the course, with fewer responses being placed in other categories and a smaller percentage of students answering that once they had completed their essay, they did nothing and simply handed the essay in (Figures IV.71, 73, 75, 77, 79, 81, and 83).

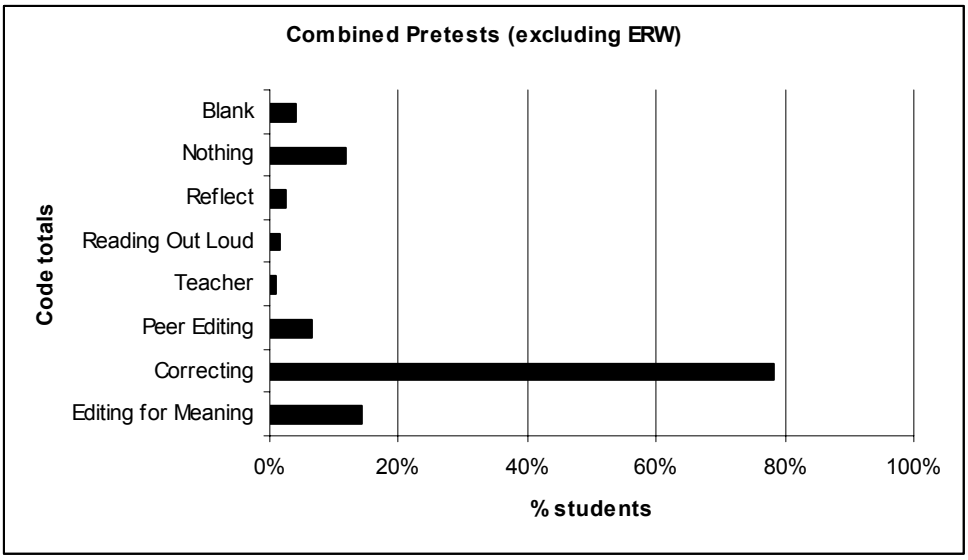

Figure IV.71. Code totals per student for Question 6 for all pretests excluding Effective Reading and Writing.

When combinations of codes are looked at, correcting by itself was the most frequent response in both pretests and posttests, increasing in the latter, as fewer combinations occurred in the posttests (Figures IV.72, IV.74, IV.76, IV.78, IV.80, IV.82, and IV.84).

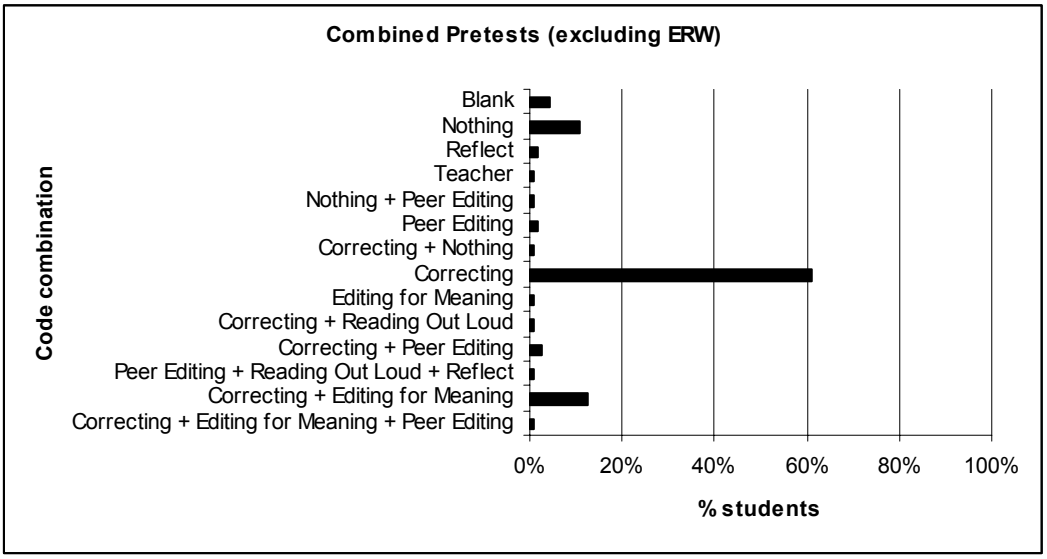

Figure IV.72. Code combinations per student for Question 6 for pretests excluding Effective Reading and Writing.

At the end of the course, in setting I, most students indicated that they corrected the mistakes in their essays when they were finished; this increased relative to the pretests. Those who did not left the question blank (Figures IV.71 and IV.73).

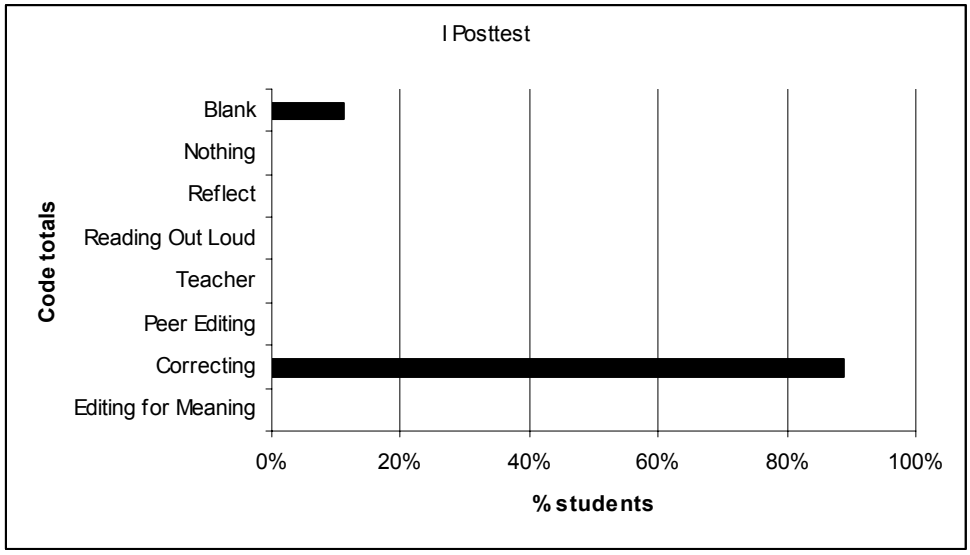

Figure IV.73. Code totals per student for Question 6 for posttests in setting I.

Correcting by itself was the only response in the posttests of this group. In the pretests, even though correcting by itself was by far the most common response, there were still other combinations of responses (Figures IV.72 and IV.74).

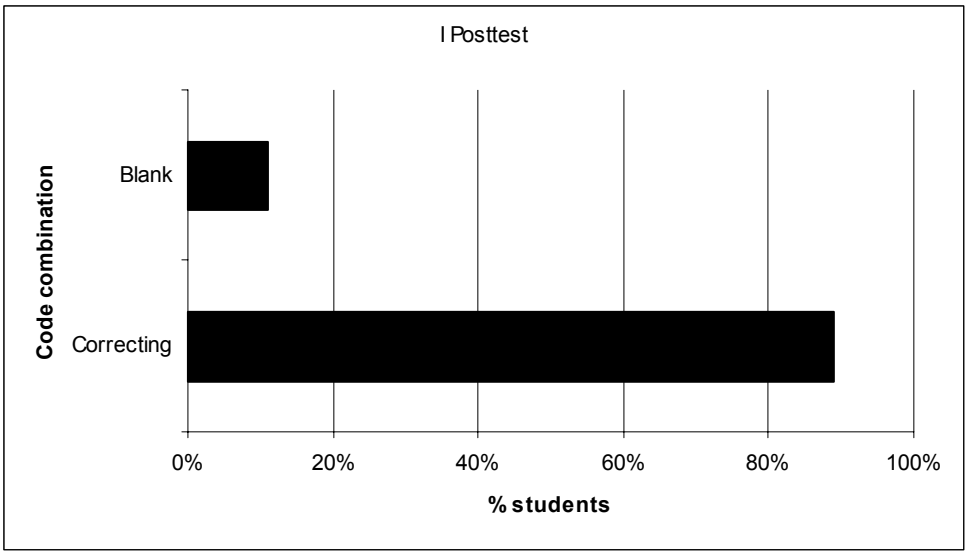

Figure IV.74. Code combinations per student for Question 6 for posttests in setting I.

Similar to setting I, the majority of students in setting II said that they corrected their mistakes at the end of the course; however, there was little change in percentage relative to the pretests. There were also students who failed to respond or indicated that they did nothing once they were finished an essay (Figures IV.71 and IV.75).

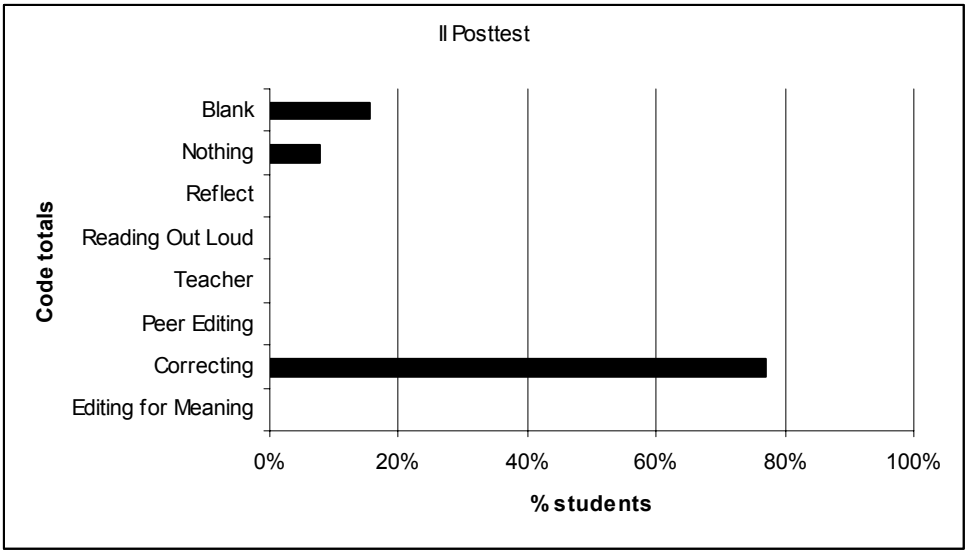

Figure IV.75. Code totals per student for Question 6 for posttests in setting II.

Correcting by itself and nothing were the only responses in the posttests of this group. In the pretests, since there were other combinations of responses, the percentage of those that were categorized only as correcting was lower than that of the setting II posttests (Figures IV.72 and IV.76).

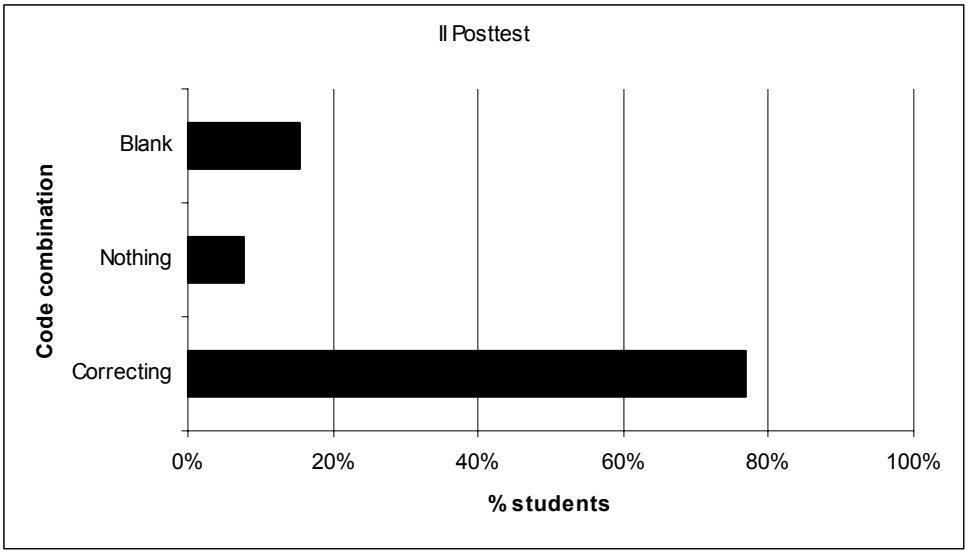

Figure IV.76. Code combinations per student for Question 6 for posttests in setting II.

Correcting was also the most frequently used response in the setting III posttests, increasing relative to the pretests. Nothing and reading out loud were also present but at smaller percentages, the former decreasing relative to the pretests and the latter increasing (Figures IV.71 and IV.77).

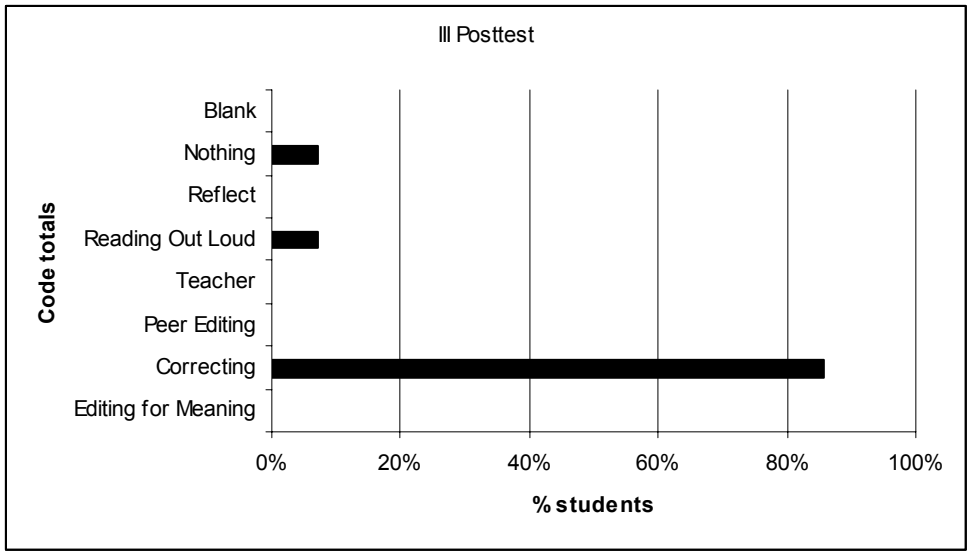

Figure IV.77. Code totals per student for Question 6 for posttests in setting III.

Correcting and reading out loud by themselves and nothing were the only responses in the posttests of this group. Reading out loud was only present combined with other responses in the pretests, whereas correcting was present by itself and in combination with other categories; therefore, correcting by itself increased relative to the pretests (Figures IV.72 and IV.78).

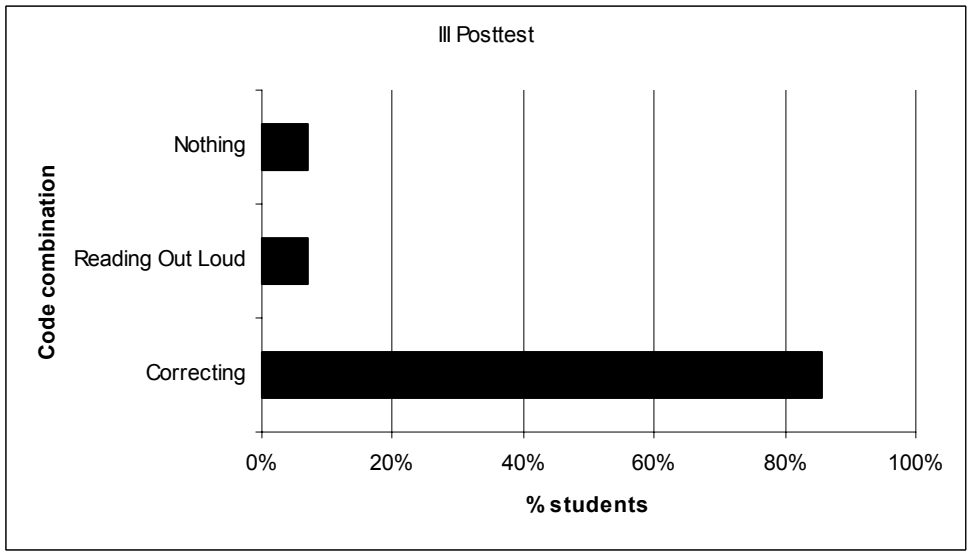

Figure IV.78. Code combinations per student for Question 6 for posttests in setting III.

In the Academic Writing Skills group of setting IV, there was an increase in the percentage of students who indicated that they corrected the mistakes in their essay and in the percentage who indicated that they edited their ideas or the meaning of their essay. Nothing and peer editing were also used to categorize some responses but in slightly lower percentages relative to the pretests (Figures IV.71 and IV.79).

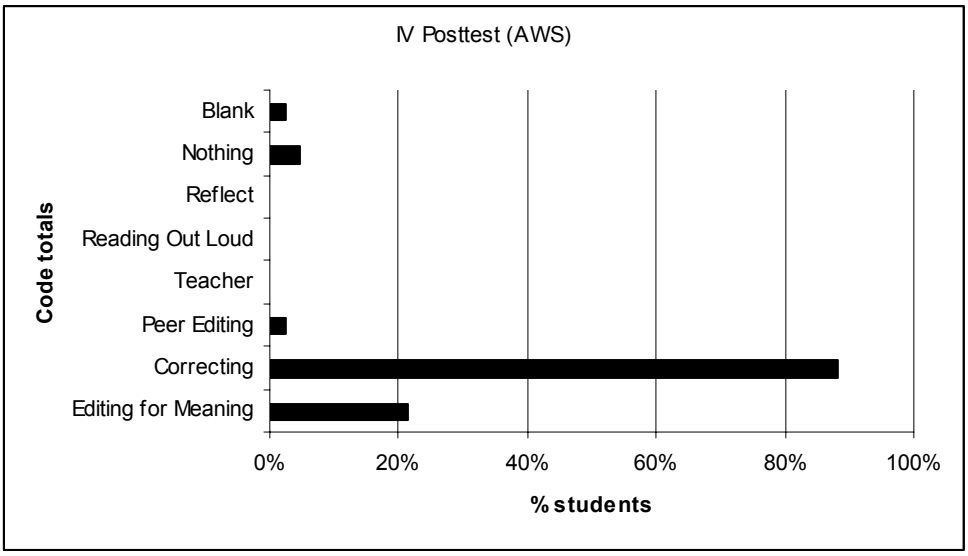

Figure IV.79. Code totals per student for Question 6 for posttests in setting IV (Academic Writing Skills).

Setting IV (AWS) combos were also categorized as editing for meaning and correcting combined with peer editing or with editing for meaning. Correcting, editing for meaning, and both of these combined occurred in higher percentages relative to the pretests (Figures IV.72 and IV.80).

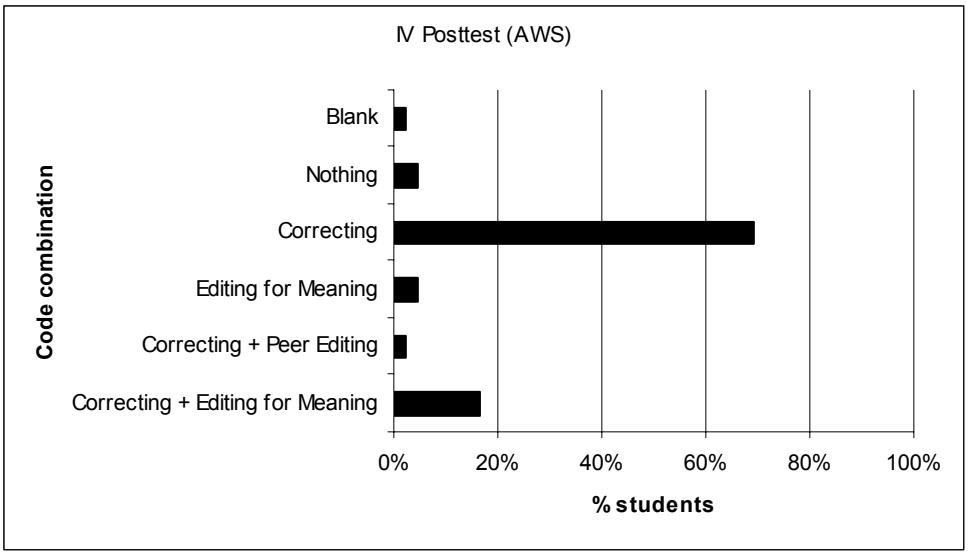

Figure IV.80. Code combinations per student for Question 6 for posttests in setting IV (Academic Writing Skills).

In the more advanced Effective Reading and Writing group of setting IV, the pretests show minor differences relative to the pretests of the Academic Writing Skills students. No students indicated that they read their essay out loud after its completion. There was an increased percentage of responses that were categorized as seeking the help of a teacher or peer, but a decrease in the percentage of responses that were categorized as correcting mistakes or editing for meaning. This last one was the greatest difference between the two groups; all other differences were small, as stated previously (Figures IV.71 and IV.81).

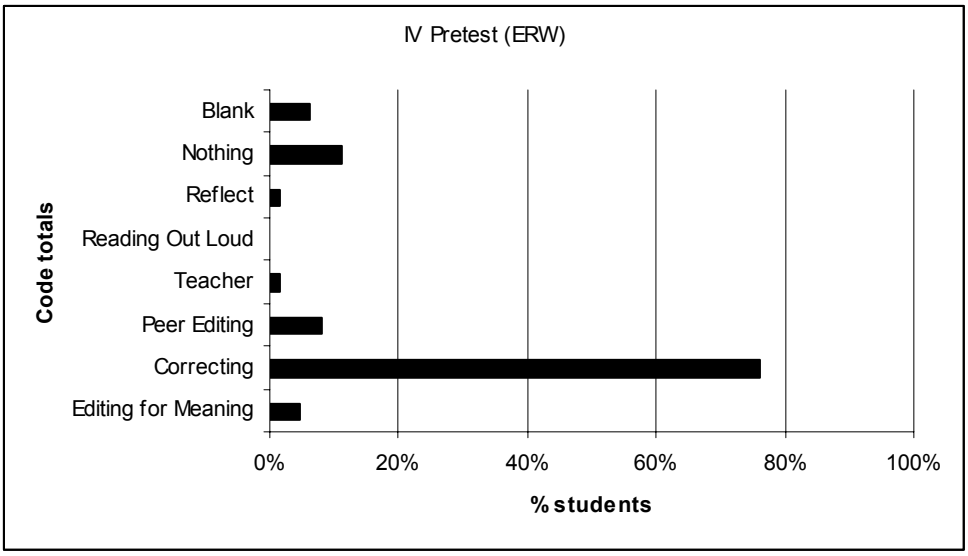

Figure IV.81. Code totals per student for Question 6 for pretests in setting IV (Effective Reading and Writing).

Correcting by itself was the most common response in the pretests of the group. Other responses involved nothing, correcting combined with editing for meaning or peer editing, and peer editing, teacher, and reflect by themselves. There were fewer combinations in the pretests of this group relative to the Academic Writing Skills pretests, but the differences in group size could account for this (Figures IV.72 and IV.82).

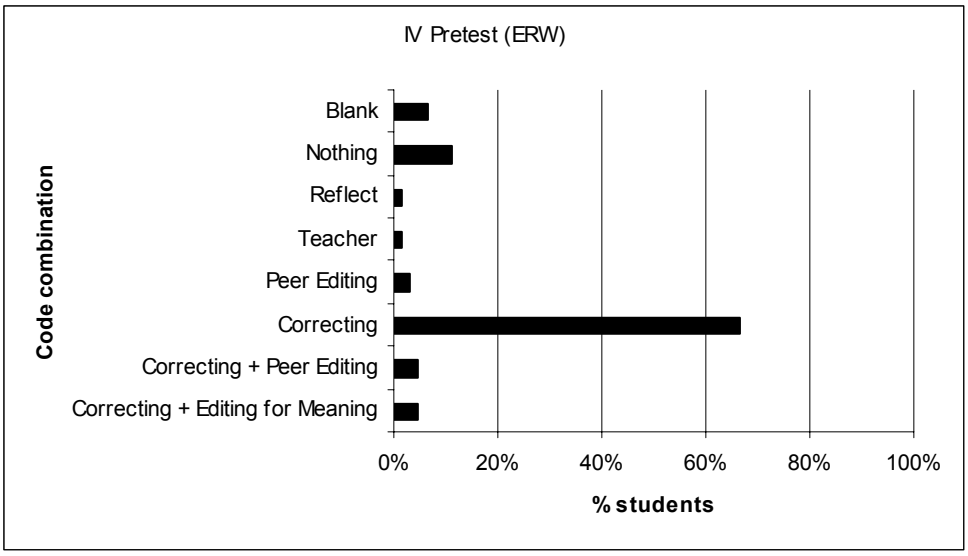

Figure IV.82. Code combinations per student for Question 6 for pretests in setting IV (Effective Reading and Writing).

Compared to the pretests of this group, in the posttests, there was an increase in the percentage of students who indicated that they corrected their mistakes or that they edited their ideas after they had completed an essay. There was a decrease in the percentage of those who said they did nothing or that they had a peer edit it for them. No students left the question blank or had responses that were categorized as reflect, reading out loud, or teacher (Figures IV.71 and IV.82).

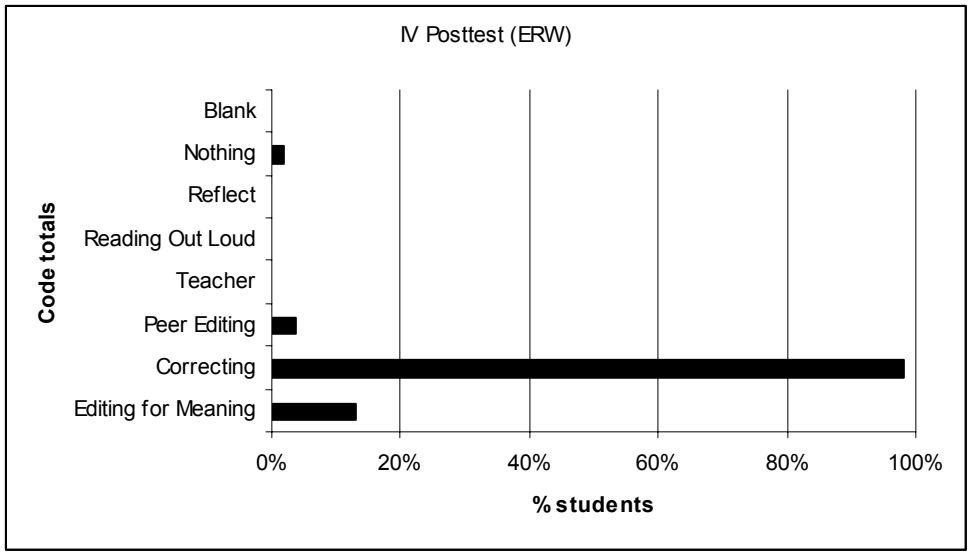

Figure IV.83. Code totals per student for Question 6 for posttests in setting IV (Effective Reading and Writing).

The most common response in the Effective Reading and Writing posttests was correcting by itself. This was followed by correcting combined with editing for meaning, correcting combined with peer editing, and nothing. Correcting by itself and combined with editing for meaning increased relative to the pretests (Figures IV.82 and IV.84).

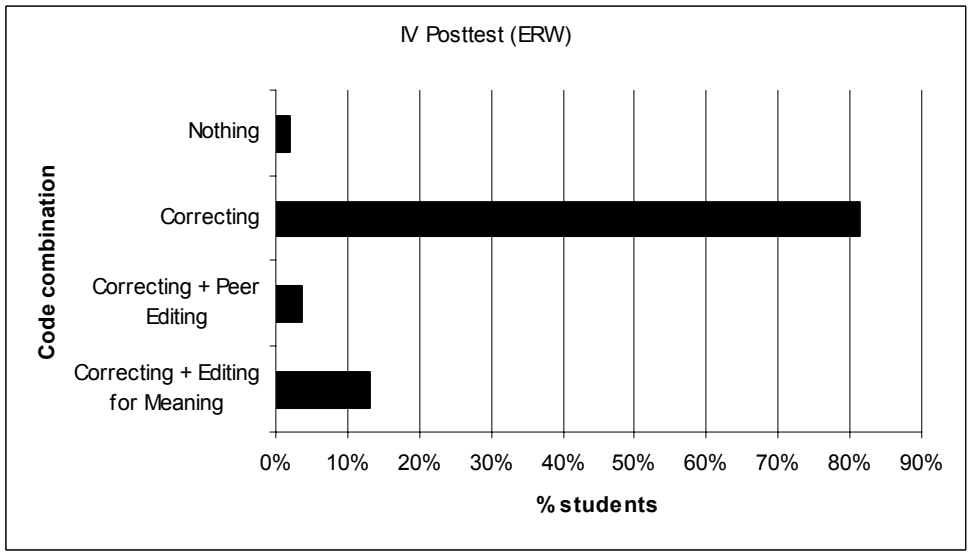

Figure IV.84. Code combinations per student for Question 6 for posttests in setting IV (Effective Reading and Writing).

Once an essay is completed, writers can do a variety of different things. They can do nothing and simply hand it in to their teacher. They can also think about it before deciding whether to make any changes. They can read it to themselves aloud to ensure that it sounds alright. They can look it over and correct spelling and grammatical errors. They can take it one step further and edit the structure and ideas to make sure that their point is well illustrated. They can also have a friend or a teacher look it over and comment on it.

The students of Academic Writing Skills and Effective Reading and Writing who were tested here were more likely to simply correct the mistakes in their essay once they had completed the course. This was also the most common response at the beginning of the course, but there was a higher percentage of students who indicated that they did one of the other options in their pretests. Compared to the pretests, fewer students said they did nothing in the posttests. Only the students in the blended socioconstructive group (Setting IV) in both courses combined more than one response at the end of the course, and this was the only group that said that they edited for meaning or had a peer edit the essay. A small percentage of individuals in the blended nonsocioconstructive group (Setting III) said in the posttest that they read the essay aloud. The students in the non-blended settings (Setting I and II) either failed to answer the question, did nothing, or corrected the mistakes in their essays once they had completed them.

B. Evolution of Application of Knowledge – Essay Writing

The Knowledge questionnaires sought to determine what students say about the process of writing an essay. The actual essays that students wrote were then examined to determine whether they actually "do what they say". Essays were analyzed at the beginning and at the end of the course to determine whether they contained components the important components of a five-paragraph essay. Essays were divided into introduction, body, and conclusion. Results for the post-test essays of the Academic Writing Skills group of setting IV were not analyzed due to unforeseen circumstances.

For the introduction, we looked at the percentage of students who included the introduction as a separate paragraph, an attention grabber, a general introduction to the topic, a thesis statement or main idea, and an outline of the body of the essay. An *attention grabber* (or "hook") is a sentence that serves to attract the attention of the reader. It does not give any specific information about the topic, nor does it contain an opinion or an argument; examples include a quote or an anecdote. A general introduction gives the background information of the topic without giving an opinion, leading up to the thesis statement. The thesis statement contains the writer's opinion on the topic. This should be followed by an outline of the main arguments to appear in the body of the essay.

For the body, the percentage of students who separated the body into paragraphs, and who had a topic sentence relating to the thesis statement in each paragraph, one central idea in each paragraph, and supporting details was

determined. Supporting details can include personal experience, prior knowledge, and secondary sources or evidence.

For the conclusion, the percentage of students who included the conclusion as a separate paragraph, returned to the main idea, and included a summary of their main arguments was assessed.

In general, at the end of the course, students improved in their ability to structure an essay. In most settings, an increase is seen in the percentage of students who included most of the components looked for in their essays. However, a decrease in the appearance of an attention grabber and a general introduction to the topic in the introduction is also apparent in most settings (Figures IV.85, IV.86, IV.87, IV.88, IV.89, and IV.90).

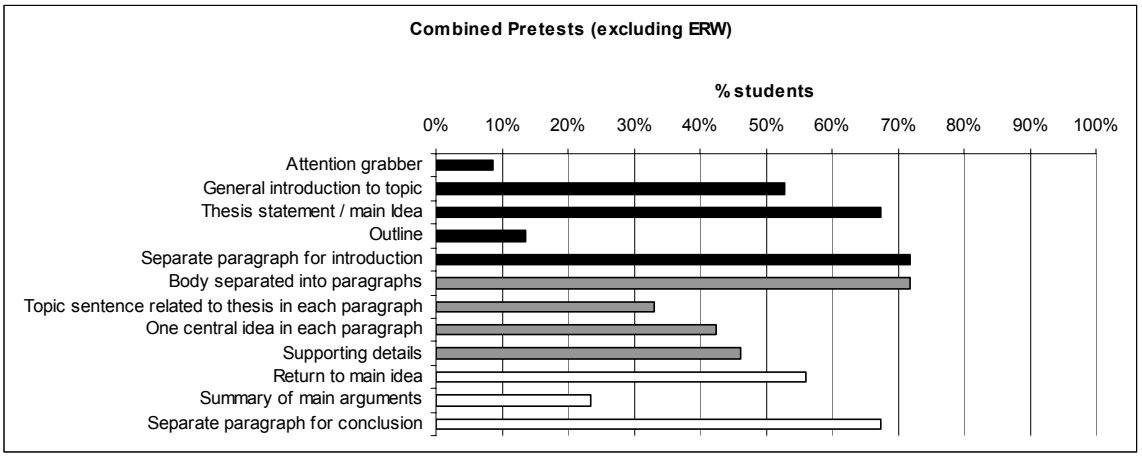

Figure IV.85. Essay parts included in pretests excluding Effective Reading and Writing.

For setting I, an increase is observed in the percentage of students who included a general introduction to the topic, a thesis statement, an outline, and the introduction as a separate paragraph at the end of the course. However, there are no students who included an attention grabber. For the body of the

essay, an increase is seen in the use of all components, which include the body separated into paragraphs, a topic sentence related to the thesis in each paragraph, one central idea in each paragraph, and supporting details. For the conclusion, an increase is also apparent in the use of all components, which include a return to the main idea, a summary of the main arguments, and a separate paragraph for the conclusion (Figures IV.85 and IV.86).

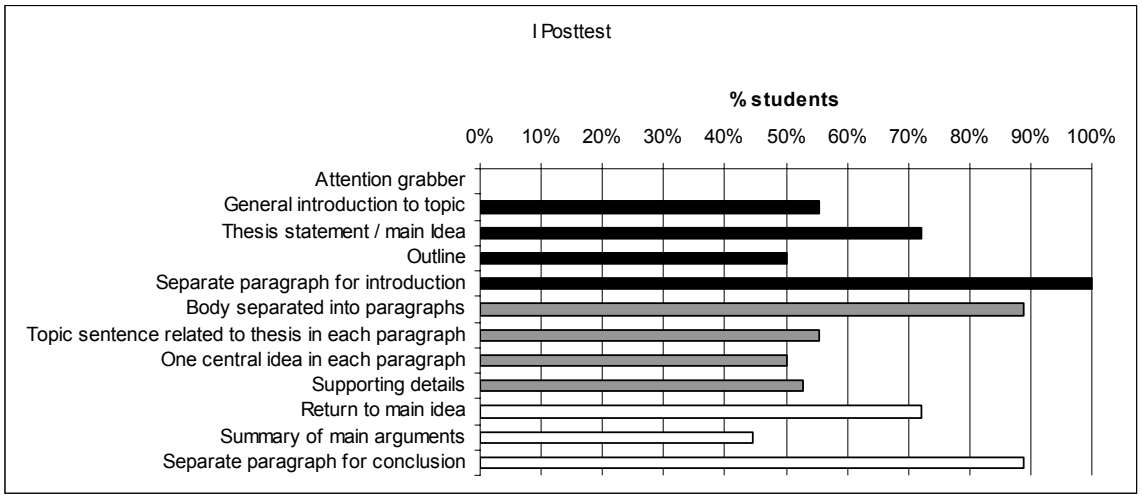

Figure IV.86. Essay parts included in posttests for setting I.

For setting II, an increase is observed in the percentage of students who included a thesis statement, an outline, and the introduction as a separate paragraph at the end of the course. However, there is a decrease in the percentage of students who included an attention grabber and a general introduction to the topic. For the body of the essay, an increase is seen in the percentage of students who included the body separated into paragraphs, a topic sentence related to the thesis in each paragraph, and one central idea in each paragraph, but a decrease is observed in the percentage of those who included supporting details. For the conclusion, an increase is apparent in the percentage

of students who returned to the main idea and who had a separate paragraph for the conclusion, but there is a decrease in the appearance of a summary of the main arguments in the conclusion (Figures IV.85 and IV.87).

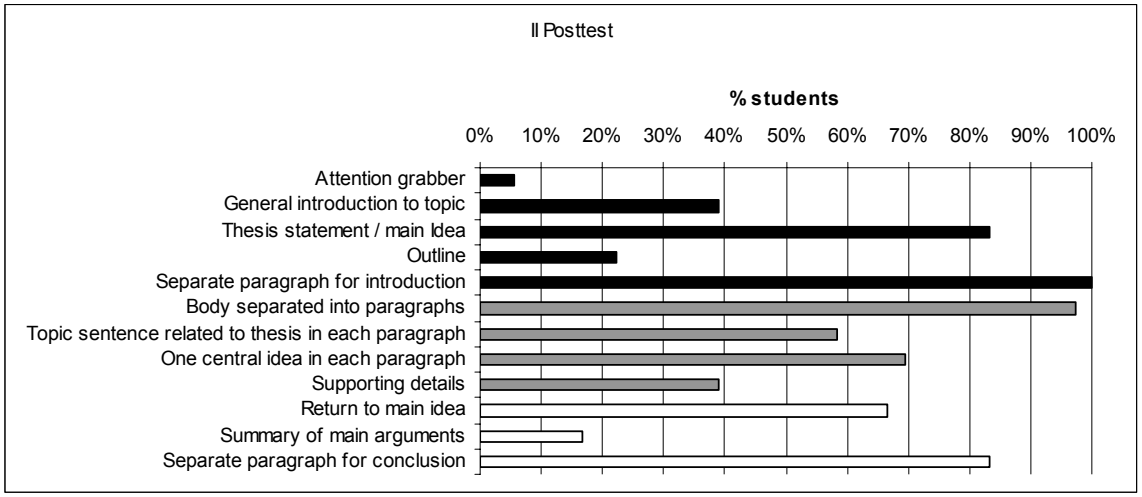

Figure IV.87. Essay parts included in posttests for setting II.

For setting III, an increase is observed in the percentage of students who included a thesis statement, an outline, and the introduction as a separate paragraph at the end of the course. However, there is a decrease in the percentage of those who included an attention grabber and a general introduction to the topic. For the body of the essay, an increase is seen in the use of all components, which include the body separated into paragraphs, a topic sentence related to the thesis in each paragraph, one central idea in each paragraph, and supporting details. For the conclusion, an increase is also apparent in the use of all components, which include a return to the main idea, a summary of the main arguments, and a separate paragraph for the conclusion (Figures IV.85 and IV.88).

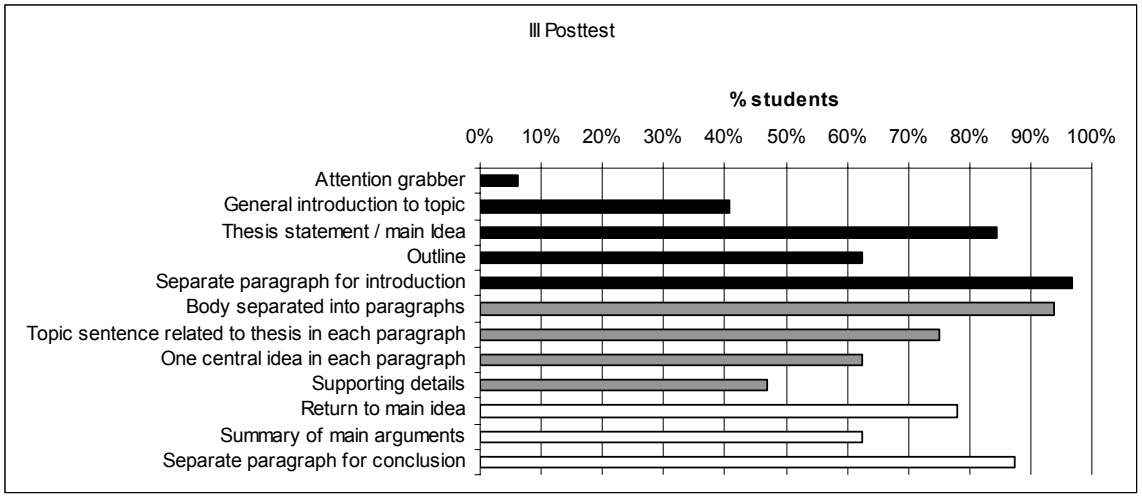

Figure IV.88. Essay parts included in posttests for setting III.

Similar to setting III, for the Effective Reading and Writing group of setting IV pretests, an increase is observed in the percentage of students who included a thesis statement, an outline, and the introduction as a separate paragraph at the end of the course relative to the Academic Writing Skills pretests. However, there is a decrease in the percentage of those who included an attention grabber and a general introduction to the topic. For the body of the essay, an increase is seen in the use of all components, which include the body separated into paragraphs, a topic sentence related to the thesis in each paragraph, one central idea in each paragraph, and supporting details. For the conclusion, an increase is also apparent in the use of all components, which include a return to the main idea, a summary of the main arguments, and a separate paragraph for the conclusion (Figures IV.85 and IV.89).

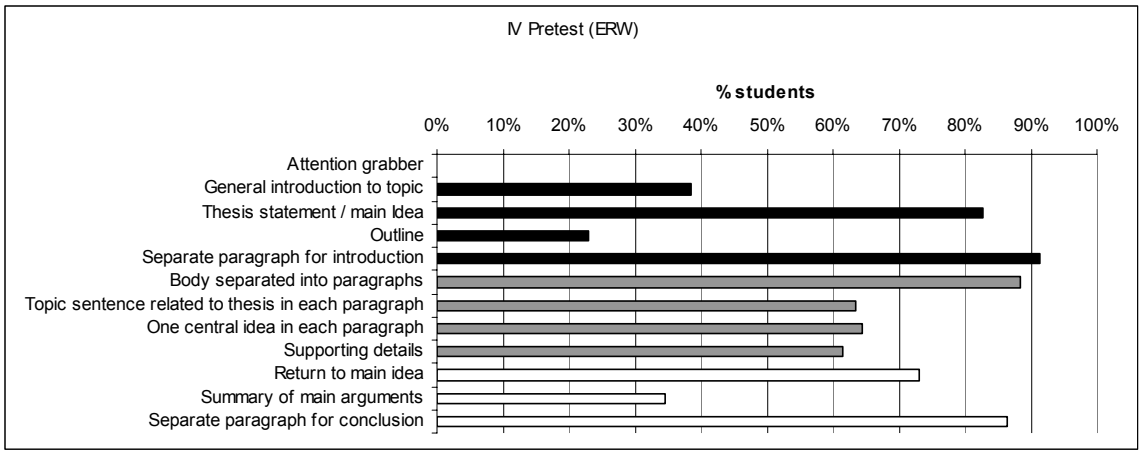

Figure IV.89. Essay parts included in pretests for setting IV (Effective Reading and Writing).

For the Effective Reading and Writing group of setting IV, an increase is observed in the percentage of students who included each component of an essay. For the introduction, the greatest increase is seen in the percentage of students who included an outline. For the body of the essay, the greatest increase is seen in the percentage of students who included supporting details. For the conclusion, the greatest increase is in the percentage of students who summarized their main arguments (Figures IV.89 and IV.90).

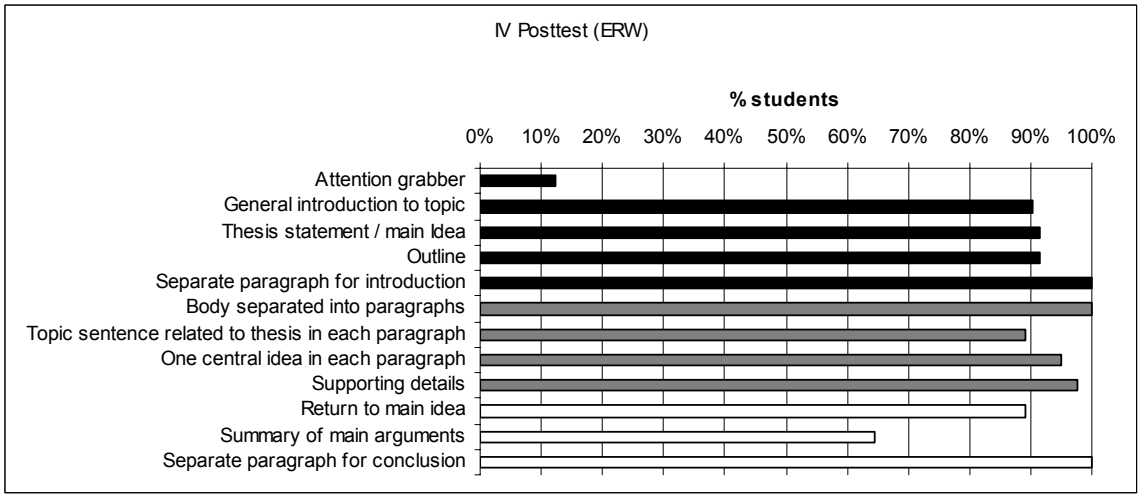

Figure IV.90. Essay parts included in post-tests for setting IV (Effective Reading and Writing).

In the structure of an essay, certain elements of the essay are more easily grasped than others. Structural and strategic components such as separating the essay into paragraphs or outlining would therefore be expected to be more readily understood. Elements that are likely to be more subtle would be expected to be more difficult to understand. For example, the difference in between an attention grabber, a general introduction to the topic, and the thesis statement or main idea might be more difficult to understand because it is not immediately obvious. Although in general there is an improvement in all settings in the percentage of students who included most of the components of an essay that were analyzed, some instructional settings improved more than others in the use of certain components. However, since the blended socioconstructive setting (Setting IV) consisted of students in the more advanced Effective Reading and Writing Course, their improvement might be limited by their higher previous skill level.

In the introduction, the more advanced blended socioconstructive setting (Setting IV) in Effective Reading and Writing was the only group to increase in their use of an attention grabber and increased the most in their use of a general introduction to the topic at the beginning of their essays. The blended non-socioconstructive group (Setting III) had the highest increase in the use of a thesis statement or main idea and in the use of an outline of their main arguments. The non-blended groups (Setting I and II) had the highest increase in the use of a separate paragraph for the introduction. Despite not having the highest increases in the use of a thesis statement or main idea, an outline, and a

separate paragraph for the introduction, the blended socioconstructive group of the Effective Reading and Writing course had the highest final percentages of students who had included these components in their essays.

In the body, the non-blended socioconstructive group (Setting II) had the highest increase in the percentage of students who separated the body into paragraphs, while the blended non-socioconstructive group (Settings III) had the highest increase in the percentage of those who had a topic sentence relating to the thesis in each paragraph. The non-blended socioconstructive group had the highest increase in the percentage of students who had one central idea in each paragraph (Setting II), while the more advanced Effective Reading and Writing blended socioconstructive group (Setting IV) had the highest increase in the use of supporting details in the body. However, as in the introduction, the Effective Reading and Writing group had the highest final percentages of students who had included each component of the body.

In the conclusion, the blended non-socioconstructive group (Setting III) had the highest increase in the percentage of students who returned to the main idea and who summarized their main arguments at the end of their essays, while both non-blended non-socioconstructive group had the highest increase in the percentage of students who had the conclusion in a separate paragraph (Settings I). However, as in the introduction and the body, the blended socioconstructive setting (Setting IV) had the highest final percentages in all components of the conclusion.

C. Discussion of Qualitative Results

Over the course of the semester, changes were noted across all settings in terms of students' responses to a knowledge questionnaire which was aimed at determining what students know about the process of writing an essay. One of the greatest differences between settings emerges when student responses from the blended socio-constructive setting (Setting IV) are compared to those of the other settings. Students in setting IV put much more emphasis on the importance of *arguments* when writing an essay. Not only do these students consistently rely on *arguments* to choose their topic and to determine what to write in an essay, they also indicate more frequently that strong arguments make an essay "good" and they actually apply this knowledge in their own writing.

The knowledge questionnaires were analysed to see what students say they know about essay writing, while the essays were analysed to determine to what extent students actually apply this knowledge. We essentially compared what students say with what they actually do.

How students answered two of the questions on the knowledge questionnaire were compared to what students included in their essays. These two questions (Questions 3 and 4) asked students how they structure an essay and what they include in the introduction of an essay. The percentage of students who actually structure an essay based on key *arguments* and who also include an *introduction*, a *body*, and *conclusion*, increased in general across all settings. Using separate *paragraphs* for an introduction, the body, and a conclusion, as well as including *supporting details* within the body, also increased in their

percentage of use. However, it appears that a higher percentage of students actually include this structure in their essays than said that they include it. This is a surprising result; typically, students are better able to say how to do something (declarative knowledge) than to actually do it (procedural knowledge). Perhaps a good number of the ESL students in this study had mastered the procedural knowledge involved in writing an essay by the end of the course, but were not yet able to accurately describe this process in response to the survey questions.

A number of our findings are quite scattered. The greatest increase in the reported use of an *introduction,* a *body,* and a *conclusion* within an essay occurred in settings with blended delivery (Settings III and IV). The traditional face-to-face setting (Setting I) showed the greatest increase in the percentage of students who indicated that they use *arguments* in their essays, although settings with blended delivery (Settings III and IV) were not far behind. In the actual essays, the face-to-face socio-constructive setting (Setting II) saw the highest increase in the separation of the essay into *paragraphs* for the introduction and the body. This is interesting, as this was the only group that showed a decrease in the percentage of students who indicated that they use these components in an essay. The traditional face-to-face setting (Setting I) had the highest increase in the percentage of students who placed the conclusion in a separate paragraph, while the blended socio-constructive Effective Reading and Writing group (Setting IV) had the highest increase in the use of *supporting details* for structuring an essay.

Question 4 of the knowledge questionnaire asked students what they include in the introduction to an essay. Students' responses to this question were compared to what they actually included in their essays. Across all settings, there was an increase in the percentage of students who said that they include a *main idea* and an *outline* in the introduction of their essays, while there was also an increase in the percentage of students who actually included these elements in their essays. The increase in the percentage of those who said they include a *main idea* in their essay is higher than that in the actual essays, while it was the opposite for an *outline*. It is likely that the concept of a *main idea* is more difficult for many students to grasp and apply as compared to the concept of an *outline*. Understanding what a *main idea* is and what is included in a thesis statement is more subtle than simply listing the ideas to be covered in the body of the essay.

The greatest increase in the reported use of a *main idea* is most apparent in the settings with blended delivery (Settings III and IV) of Academic Writing Skills, while the blended setting with a traditional pedagogical approach (Setting III) had the highest increase in the percentage of students who said they include an *outline* in the introduction. This last setting also had the highest increases in the use of a *main idea* and of an *outline* in the actual essays. Although the increase was not higher, the final percentage of students who said they include a *main idea* and actually included a *main idea* and an *outline* in their essays was highest in the Effective Reading and Writing group of the blended socio-constructive setting (Setting IV). Other elements that were looked for in the introduction include an *attention grabber* (or 'hook') at the beginning of the essay

and a *general introduction to the topic*. The use and reported use of an *attention grabber* increased only in the Effective Reading and Writing group of the blended socio-constructive setting (Setting IV). The inclusion of a *general introduction to the topic* increased in reported use only in the Academic Writing Skills group of the blended socio-constructive setting (Setting IV) and increased the most in its actual use in the Effective Reading and Writing group of the blended socio-constructive setting (Setting IV).

Other questions on the knowledge questionnaire could not be compared to their application in essay writing. Question 1 asked students how they choose a topic. In general, the number of students who indicated that they choose their topic based on their own *interest* decreased, while the number of students who indicated that they choose their topic based on their own *knowledge* either remained the same or increased over the semester. The importance of *knowledge* by itself or in combination with other strategies was evident in all groups. The use of one's *knowledge* in writing an essay may bring students one step closer to using the more complex strategy of selecting a topic based on *arguments*; we noted that when the use of *knowledge* to choose a topic decreased, the use of *arguments* increased. The use of *arguments* to select a topic appeared to be more important to students in settings with blended delivery (Settings III and IV).

Question 2 asked students how they choose what to write in an essay after deciding upon a topic. Overall, the number of students who choose what to write in an essay by *explaining the topic* decreased, while the number of students

who choose what to write based on a specific *strategy* increased over the semester. A *strategy* by itself or in combination with other methods of determining what to write was important to students in all groups. *Strategies* used by students to organize their ideas and arguments before starting to write included outlining, brainstorming, and free-writing. Using a *strategy* to decide what to write was slightly more important to students in the settings with face-to-face delivery (Settings I and II). It was also evident that, in settings with blended delivery (Settings III and IV), a higher percentage of students considered *arguments* to be crucial in deciding what to write in an essay. *Strategies* such as outlining require the breaking down of one's arguments. Furthermore, the Effective Reading and Writing students were the only ones to emphasize the use of *secondary sources* in helping to decide what to write an essay.

Question 5 asked students what makes an essay "good." Most students indicated that good *arguments and support*, *clarity*, and good *grammar and vocabulary* were important in an essay, with *structure* also being important to the students in Effective Reading and Writing (Setting IV). At the end of the course, *grammar and vocabulary*, as well as *clarity*, increased in percentage in settings with face-to-face delivery (Settings I and II). *Structure* increased in settings with blended delivery (Settings III and IV). *Arguments and support* increased in the face-to-face, socio-constructive setting (Setting II), in the blended, traditional pedagogy setting (Setting III), and the Effective Reading and Writing group of the blended, socio-constructive setting (Setting IV). The greatest increase in *grammar and vocabulary* occurred in the face-to-face traditional pedagogy

setting (Setting I), the greatest increase in *clarity* occurred in the Academic Writing Skills group of the blended, socio-constructive setting (Setting IV), and the greatest increase in *structure* and *arguments and support* occurred in the blended, traditional pedagogy setting (Setting III). Improvements in the importance of arguments and support, clarity, and structure were deemed to be of a higher value than improvements in the importance of grammar and vocabulary, as the ideas, and organization and coherency of the ideas, in an essay are more difficult concepts to grasp but ultimately more important to learn than simpler concepts of grammar and vocabulary.

Question 6 asked students what they did once they had completed an essay. Across all settings, there was an increase in the percentage of students who indicated that they simply *correct* the mistakes in their essays. At the end of the course, only the students in the blended socio-constructive group (Setting IV) indicated that in addition to *correcting* mistakes, they also *edit for meaning* or have a another student *peer edit* their essay. A small percentage of students in the blended traditional pedagogy setting (Setting III) said in the post-test that they *read the essay aloud*. All students in the face-to-face settings (Setting I and II) either failed to answer the question, *do nothing*, or *correct* mistakes once they have finished writing their essay. It is interesting to note that only students in settings with blended delivery felt that it was necessary to go beyond simply correcting grammatical and spelling errors.

V. Conclusions

The goal of this project was to systematically investigate how, why and to what extent blended courses are effective in improving student perseverance, performance, and motivation in the teaching of English as a Second Language. The primary focus, therefore, was to measure the relative effectiveness of four instructional settings: face-to-face / traditional pedagogical approach (Setting I); face-to-face, socio-constructive approach (Setting II); blended, traditional pedagogical approach (Setting III); and blended, socio-constructive approach (Setting IV). The settings with blended delivery combined traditional face-to-face teaching with interactive technology, while in the settings with a more socio-constructive pedagogical approach, learners actively constructed knowledge rather than passively acquired it as is the case in the traditional non-socio-constructive approach. The specific objectives of this project were to determine whether blended courses developed with limited resources and minimal technical skills improve student outcomes in second language classrooms where the focus is on reading and writing skills, to investigate the interaction between student characteristics, instructional setting and effectiveness and to identify differential effects with respect to gender, prior level of performance and prior level of motivation.

A. Quantitative Results

When changes in achievement were looked at, achievement was found to be higher in settings with blended delivery, while persistence was found to be

higher in settings with a socio-constructive approach. When changes in motivation were analyzed, it was found that students in settings with blended delivery appeared to feel more pressure and to feel that they had less of a choice in participating in the course, while their perceived competence in reading and perseverance were also lower. Despite this, their perceived competence in the course overall was found to be higher. Furthermore, writing was found to be more highly valued by students in settings with a socio-constructive approach, while their interest in the course material was lower. When the blended socio-constructive setting was analyzed separately to look at the relationship between online participation and different variables, it was found that online participation in males was positively related to teacher online activity and student feedback, while persistence and online participation, as well as final achievement and online participation, were positively related for all students.

B. Qualitative Results

Students in all settings were also given a knowledge questionnaire aimed at determining what students know about the process of writing an essay. Their declarative knowledge about essay writing could then be compared to their procedural knowledge by comparing what they *said* they did when writing an essay and what they actually did. This analysis was done in order to determine whether blended and/or socio-constructive settings had an influence on any particular aspect of the essay writing process. The most dramatic difference between students in the blended socio-constructive instructional setting (Setting IV) and those in other settings is the importance they attribute to the role of

arguments in an essay. Not only do these students consistently rely on *arguments* to choose their topic and to determine what to write in an essay, they also indicate more frequently that strong arguments make an essay "good" and they actually apply this knowledge in their own writing.

C. Recommendations

To summarize, achievement in the course appears to be positively related to whether or not a student is in a setting with blended delivery and to whether or not a student participates frequently in online activities. Furthermore, students in settings with blended delivery also have a higher perceived competence overall in the course and seem to be better able to grasp that arguments are critical in the essay-writing process.

However, in order to properly take advantage of these potential benefits of blended learning, the possible disadvantages of such learning must also be addressed. These disadvantages became apparent when analysing students' motivation with respect to the course. The main issues with blended delivery were an increase in pressure and a perceived lack of choice in participating in the course, as well as a lower perceived competence in reading and lower perseverance in the course. Though initially discouraging, these findings cut to the core of blended/socio-constructivist learning. This type of learning requires deep thinking and the use of meta-cognitive strategies on the part of students. The extra demands of deep thinking don't always feel good, especially at first. Students need to be helped to understand and integrate such experiences and ultimately feel good about them. Students in blended socio-constructivist courses

need a kind of orientation, not just in terms of the technology being employed, but more importantly, in dealing with the potential for profound change that working deeply with their learning may bring them. In this way, we can help reduce the sense of pressure students feel and support them in their strides towards stronger reading and writing skills.

Our results suggest that students should be made aware before registering for a course that the course contains an online component and they should be made to understand what this entails. This would then allow them to make an informed decision as to whether or not they want to participate in a blended course and students would no longer feel forced into taking this type of course.

The increase in pressure that students feel when taking a blended course could be attributed to either an increase in work overall or stress brought on by the use of unfamiliar technology. Students who register for a class that they know will contain an online component may be more technologically inclined; therefore, openly advertising that a course contains an online component could also be a partial solution to this problem. To address the other possible reason for an increase in pressure, teachers of blended courses should be discouraged from simply adding online work to the work they would have assigned in a face-to-face course; rather, they should be encouraged to integrate both online and non-online activities to balance out the workload, so that the workload of the blended course is comparable to that of a face-to-face course. Furthermore, the more that some of the online work can be done in class during regularly scheduled times in

a computer lab, the more students will see it as an integral part of the course and not as just a fancy 'add-on'. This, we feel, is of the utmost importance, as students will also be less likely to feel that they have been given more work if they have been allowed to perform the work in class rather than as homework.

The lower perceived competence in reading and the lower perseverance in the course could be explained be the inability of students who are reading materials online to mark-up their readings and highlight important details. Although one of the advantages of performing class activities on a computer is a decreased reliance upon paper, ESL students in general might rely more on paper copies of readings in order to write definitions in the margins or underline an important phrases. They should therefore be encouraged by the teacher to print the class readings. Perhaps reading does not have to be done at all on the computer, while discussions, the sharing of ideas and writing assignments online, and other interactive activities can continue to be done online.

Given the small numbers and heterogeneous population, this study should be replicated. The study should also be repeated after the suggested changes to course delivery have been made to see if there are any additional effects. Furthermore, other issues, such as the gender of students, the gender of the teacher, and the ethnicity and age of the student population could also be taken into account in future studies.

D. Summary

This project found that blended online and face-to-face teaching could be beneficial to the instruction of English as a Second Language by increasing

overall achievement and students' perceived competence in the course, as well as their understanding of the importance of arguments in the process and the actual writing of an essay. However, in order to fully take advantage of these potential benefits, a few suggestions for practice can be made based on our findings: (1) allow students to choose whether or not to take a course with an online component by advertising the blended aspects prior to registration; (2) discourage teachers from increasing the workload of students in blended courses, while encouraging them to allow more class time for online work; and (3) separate reading activities from the online component of the course. With these suggestions, interactive technology implemented with minimal resources and minimal technical skills when combined with in class learning can further increase the effectiveness of teaching English as a Second Language.

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Appendices

Appendix 1

Constructivist checklist

Constructivist checklist

Constructivism is a theory of knowledge with roots in philosophy, psychology and cybernetics. Such is the definition provided by constructivist's leading theorist, E. von Glasersfeld (1989). How does this theory of knowledge translate into practice? How do definitions of what it means to "construct knowledge" inform our actions as educators? While constructivism is clearly gaining popularity as a new paradigm for learning, many question how the philosophy can be operationalized. They argue that it does not provide a method, approach or particular pedagogy.

At the same time, numerous researchers and educators are busy designing what they refer to as constructivist learning environments. Descriptions abound of what their creators refer to as "constructivist" projects, activities and approaches. How have these projects realized the transition from constructivist philosophy to practice? What characteristics do these projects and environments exhibit? The previous section of this site presented a summary of constructivist characteristics. This section considers how these characteristics might be exhibited in a given learning environment or project.

The following checklist is designed to serve as a simple instrument to observe some of the ways in which these constructivist characteristics are present in learning projects, activities and environments. The observation should provide insights into the ways in which constructivist philosophy translates into practice. The checklist will only be applied to projects, activities and learning environments which are presented online. For this reason, and depending on how the projects are described, it may not always be possible to observe all of the characteristics. Many may only be evident in the actual classroom situation. As well, certain projects may emphasize fewer characteristics depending on the teacher and the group of students. For this reason, the checklist serves a limited purpose. Nonetheless, it should provide some insights into how constructivist concepts might be operationalized in an instructional setting.

CONSTRUCTIVIST CHECKLIST

CHARACTERISTIC	SUPPORTED	NOT SUPPORTED	NOT OBSERVED
Multiple perspectives			
Student-directed goals			
Teachers as coaches			
Metacognition			
Learner control			
Authentic activities & contexts			
Knowledge construction			
Knowledge collaboration			
Previous knowledge constructions			
Problem solving			
Consideration of errors			
Exploration			
Apprenticeship learning			
Conceptual interrelatedness			
Alternative viewpoints			
Scaffolding			
Authentic assessment			
Primary sources of data			

From Murphy 1997

Appendix 2

Motivation questionnaire

Instructions

All of the following questions relate to English, both inside and outside of the classroom.

- For each question, circle the number that best describes how you feel about that statement.
- Please respond to all of the questions, even if some seem repetitive.
- There are no good or bad answers. We just want to know your point of view.
- For questions **1 to 60**, we want you to indicate your agreement or disagreement with the given statement:

    1. **Very much disagree**
    2. **Disagree**
    3. **Slightly disagree**
    4. **Slightly agree**
    5. **Agree**
    6. **Very much agree**

- For questions **61 to 74**, we want you to indicate how often the given statement is true of you:

    1. **Never**
    2. **Very rarely**
    3. **Rarely**
    4. **Sometimes**
    5. **Often**
    6. **Always**

	Statements	Very much disagree	Disagree	Slightly disagree	Slightly agree	Agree	Very much agree
1	The thought of writing an essay in English makes me stressed.	1	2	3	4	5	6
2	I think reading is important.	1	2	3	4	5	6
3	Most of the time, I have no difficulty writing in English.	1	2	3	4	5	6
4	For an English course to be beneficial to me, I must be able to work at my own pace.	1	2	3	4	5	6
5	I read to improve my English vocabulary.	1	2	3	4	5	6
6	For me, doing written assignments in English is a waste of time.	1	2	3	4	5	6
7	I was forced to take this course; it was not my choice.	1	2	3	4	5	6
8	I do not feel the need to take a course to improve my English skills since I already speak very well.	1	2	3	4	5	6
9	Reading articles on the Internet is a good way to practice my English reading skills.	1	2	3	4	5	6
10	Each time I do a reading exercise in English, I try to make fewer mistakes than the last time.	1	2	3	4	5	6
11	I enjoy reading in English.	1	2	3	4	5	6
12	It is important for me to take a course to help me improve my English skills.	1	2	3	4	5	6
13	Each time I write an essay in English, I try to express my ideas and thoughts more and more clearly.	1	2	3	4	5	6
14	I feel that my English skills are strong enough to study in English at the college level.	1	2	3	4	5	6
15	It often happens that I don't understand written questions.	1	2	3	4	5	6

	Statements	Very much disagree	Disagree	Slightly disagree	Slightly agree	Agree	Very much agree
16	I believe that by working on improving my reading skills in English, I am investing in my future professional success.	1	2	3	4	5	6
17	In order for an English course to be useful for me, I must have a say in how the course is organized.	1	2	3	4	5	6
18	Reading in English allows me to learn new things about the world.	1	2	3	4	5	6
19	I think that is important to be able to write well in English.	1	2	3	4	5	6
20	I took this course because I wanted to.	1	2	3	4	5	6
21	Taking an English course is important for improving my English writing skills.	1	2	3	4	5	6
22	The Internet provides me with many activities for improving my English skills.	1	2	3	4	5	6
23	When writing essays in English, I am constantly trying to do better and better.	1	2	3	4	5	6
24	In my opinion, reading is a waste of time.	1	2	3	4	5	6
25	By taking an English course, I am improving my chances of achieving academic or professional success.	1	2	3	4	5	6
26	When writing essays in English, I am always trying to improve my syntax and grammar.	1	2	3	4	5	6
27	I took this course because I had to.	1	2	3	4	5	6
28	I feel that I have developed the written skills that are necessary for success at the college level.	1	2	3	4	5	6
29	I have difficulties understanding what I am reading in English.	1	2	3	4	5	6
30	I enjoy writing in English.	1	2	3	4	5	6

	Statements	Very much disagree	Disagree	Slightly disagree	Slightly agree	Agree	Very much agree
31	I feel confident when I have an English essay to write.	1	2	3	4	5	6
32	Writing essays allows me to clarify my ideas and make them more precise.	1	2	3	4	5	6
33	I took this course because I had no choice.	1	2	3	4	5	6
34	I do not think that the Internet provides me with ways of improving my English skills.	1	2	3	4	5	6
35	Every time I write an essay, I try to make fewer mistakes and get a better grade.	1	2	3	4	5	6
36	I take pleasure in improving the quality of my written English.	1	2	3	4	5	6
37	I feel stressed when writing an essay in English.	1	2	3	4	5	6
38	In my case, taking an English course is a waste of time.	1	2	3	4	5	6
39	Every time I write an essay, I work on improving the quality of my written English.	1	2	3	4	5	6
40	My English reading skills are not yet strong enough to allow me to study at an English college.	1	2	3	4	5	6
41	I have difficulty finding the main idea in a reading.	1	2	3	4	5	6
42	I felt like I was forced to take this course.	1	2	3	4	5	6
43	I believe that by developing my reading habits, I am improving the quality of my English.	1	2	3	4	5	6
44	In general, I am able to do the written work that is assigned to me.	1	2	3	4	5	6
45	For an English course to be worthwhile, I must be given a choice as to how I want to develop my skills.	1	2	3	4	5	6

	Statements	Very much disagree	Disagree	Slightly disagree	Slightly agree	Agree	Very much agree
46	I feel relaxed when I write essays in English.	1	2	3	4	5	6
47	Writing is an opportunity for me to learn more about myself.	1	2	3	4	5	6
48	Writing essays is important for developing one's knowledge of the world.	1	2	3	4	5	6
49	I do not feel nervous or stressed when writing an essay in English.	1	2	3	4	5	6
50	I am happy to be in this English course; I am here because I want to be.	1	2	3	4	5	6
51	Reading through articles or other texts on the Internet is a good way to improve my knowledge of English vocabulary.	1	2	3	4	5	6
52	When writing an essay, I always force myself to do the best that I can.	1	2	3	4	5	6
53	I love the English language.	1	2	3	4	5	6
54	What I am learning in this English course will be useful to me in my future studies, regardless of my program of study.	1	2	3	4	5	6
55	I read to develop my own knowledge of the world.	1	2	3	4	5	6
56	I feel anxious when I write essays in English.	1	2	3	4	5	6
57	I do not need to take another English course to improve my writing skills.	1	2	3	4	5	6
58	Most of the time, I think that the reading I have to do for my English course is easy.	1	2	3	4	5	6
59	I feel that it was not my choice to take this course.	1	2	3	4	5	6
60	I feel pressure when writing an essay in English.	1	2	3	4	5	6

For questions **61 to 74**, we want you to indicate how often the given statement is true of you:

1. **Never**
2. **Very rarely**
3. **Rarely**
4. **Sometimes**
5. **Often**
6. **Always**

	Statements	Never	Very rarely	Rarely	Sometimes	Often	Always
61	I organize my time before doing my homework.	1	2	3	4	5	6
62	When I am reading an article, I write down, underline or highlight the important points in the article.	1	2	3	4	5	6
63	When writing an essay, I never give up, even if I am having difficulty expressing my thoughts in English.	1	2	3	4	5	6
64	Before starting my homework, I read the instructions to get an idea of how long it will take me to complete the assignment.	1	2	3	4	5	6
65	To do my work, I choose a place where I will not be distracted.	1	2	3	4	5	6
66	When I am reading an article or a text, I re-read the more difficult passages in order to understand them better.	1	2	3	4	5	6
67	Before handing in an essay, I re-read what I have written and try to correct as many of my errors as possible.	1	2	3	4	5	6
68	When I am writing an essay for a course, I make sure that I understand all of the instructions given by the teacher.	1	2	3	4	5	6
69	I use dictionaries or electronic translators to help me with my homework.	1	2	3	4	5	6

	Statements	Never	Very rarely	Rarely	Sometimes	Often	Always
70	When I am reading an article or a text, I continue reading, even if I am having difficulty understanding some of the author's arguments.	1	2	3	4	5	6
71	Before submitting any written work, I look over the quality of my written English.	1	2	3	4	5	6
72	When I am reading material for a course, I make sure that I am in a place where I will be able to concentrate.	1	2	3	4	5	6
73	Even when it is difficult, I continue working on an essay until it properly expresses my thoughts.	1	2	3	4	5	6
74	When a teacher returns a corrected essay to me, I take the time to review it in order to understand my English mistakes.	1	2	3	4	5	6

Appendix 3

Consent form

CÉGEP
VANIER COLLEGE

Second Language Learning

Directions to the Student

A team at Vanier is doing research to investigate the effectiveness of different learning environments for second language learning. Your English instructor has agreed to allow this team to gather information through questionnaires, selected questions/responses on tests and interviews. All data from this study will be kept **strictly confidential**. This data, and your decision to assist in this effort (or not), will in **no way** influence your grade in this or any other course.

If you are interested in more information, or the results of this research, please contact Judy Macdonald, principal investigator, at The Learning Centre, Vanier College, B-205, 744-7500, extension 7903.

I, the undersigned, consent to participate with the assurance that the data will be kept confidential and it will in no way affect my grade in this or any other course. I understand that I have the right to refuse to participate at any time, and that such refusal will also in no way affect my grade in this or any other course. Further, should I decide to participate at this time, I can subsequently change my mind and any data that I have contributed will be withdrawn at my request.

PRINT NAME: _____

SIGNATURE: _____

Appendix 4

Student demographic information form

General Information

SUBJECT #:_____

1. The first language I learned and still understand:

   ☐ English ☐ Other (specify) _____

2. The second language I learned and still understand:

   ☐ English ☐ Other (specify) _____

3. I have taken this course (*Academic Writing Skills*):
   ☐ Never before – this is my first time
   ☐ Once
   ☐ Two or more times

4. I am:

   ☐ Male
   ☐ Female

5. I am:

   ☐ 10 – 14 years old
   ☐ 15 – 19 years old
   ☐ 20 – 24 years old
   ☐ 25 – 29 years old
   ☐ 30 years old or more

6. My main academic / professional interests are most closely related to (select <u>one</u>):

   ☐ Business
   ☐ Computer Science / Computer-related technologies
   ☐ Communications and/or Creative Arts
   ☐ Health Professions
   ☐ Languages
   ☐ Music
   ☐ Pure and Applied Sciences / Engineering / Engineering-related technologies
   ☐ Social Sciences / Education
   ☐ Other –specify : _____

7. I have written the <u>Vanier College Admission Test</u> at least once: ☐ YES ☐ NO

Appendix 5

Computer skills inventory

Subject #: _____

Computer Skills Inventory

	Questions	Answers
1	Are you comfortable using a word processor?	Yes □ No □
2	Are you comfortable using the Internet (Internet Explorer, Netscape, Mozilla)?	Yes □ No □
3	Can you print from web pages?	Yes □ No □
4	Can you use a search engine (e.g. Google, Yahoo)?	Yes □ No □
5	Are you able to enter information into a web form?	Yes □ No □
6	Have you used a discussion forum (i.e. read and post messages)?	Yes □ No □
7	Have you used instant messaging (e.g. MSN messenger, Yahoo messenger, ICQ)?	Yes □ No □
8	Have you ever created your own web page, blog, etc.?	Yes □ No □
9	Can you play audio and/or video files?	Yes □ No □
10	Have you ever tried any online grammar activities?	Yes □ No □
11	Can you open and/or send attachments using email?	Yes □ No □
12	Do you have a computer at home?	Yes □ No □
13	Do you have Internet access at home? If yes, what kind of connection do you have?	Yes □ No □ Dial-up (56 Kps modem) □ High speed, DSL, or cable □

14	I use a computer:	Never □ Rarely □ Sometimes □ Often □
15	I use email:	Never □ Rarely □ Sometimes □ Often □
16	How do you prefer to learn new technology?	Online □ Workshops □ Books □

Appendix 6

Student feedback forms

Course Feedback

At the beginning of the course how did you feel about your level of English?

Now that you have completed the course, how do you feel about your level of English?

How did the course allow you to work on your strengths and weaknesses? Describe some of the typical activities of his course.

What was your favourite in-class activity? Why?

What was your <u>least</u> favourite in-class activity? Why?

At this point, would you feel ready to study full time in English? If so, what makes you feel this way? If not, what makes you feel that way?

How do you think Internet resources could be used in this type of course?

Do you have preferences as to the type / topics of the texts that you read and summarize for this course?

Would you recommend this course to your friends? Why or why not?

Comments or suggestions:

Blended feedback

1. Subject # - VERY IMPORTANT!!!

2. Indicate your agreement or disagreement with the following statements:

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
Reading articles on the Internet is a good way to practice my English reading skills.						
Exploring websites allows me to improve my knowledge of English vocabulary.						
The Internet provides me with many resources that give me ideas for my essays.						
Activities that allow me to interact online with other students helps me to improve my English skills.						

3. Which of these activities did you like the:

	Online Vocabulary Forum	Creating an Avatar	Multiple Intelligences Surveys	Branding and Logos	Animals as Entertainment	Evaluating Web Design Activities	Cloning Activities
best?							
least?							

4. What did you like best about the online vocabulary forum? What did you like least about the online vocabulary forum? Please be specific and give as many details as you can.

5. What did you like best about the online activities and why? What did you like least about the activities? Please be specific and give as many details as you can.

6. Were you interested in the activities? What kept you interested?

7. How did the online activities help you with your other class work?

8. Did you have any technical difficulties? Explain.

9. Would you recommend a course with online activities to your friends? Why?

10. Comments or suggestions:

Appendix 7

Teacher feedback questionnaire

Teacher feedback questionnaire

1. **Please comment on the different online activities. What did you like, what could use improvement, and why? Please state any recommendations you may have.**

2. **As you worked with the online materials, did you feel supported on both a pedagogical and technical level? Please comment. Could we have done anything differently to better support you?**

3. **If you were to teach this course again, would you be willing to continue working with online materials? Please comment.**

4. **Given the opportunity, would you be interested in collaborating on the design of future online activities? Please comment.**

5. **Other comments and suggestions - please be as specific as possible so that we can improve the online materials and also better integrate teachers into the process of designing and implementing the materials.**

Appendix 8

Interview questions

QUESTIONS	OBJECTIVES
Why did you take this course?	Student's choice or not?
At the beginning of the course how did you feel about your level of English?	Perceived competence
Now that you have completed the course, how do you feel about your level of English?	Perceived competence
How did the course allow you to work on your strengths and weaknesses? Describe some of the typical activities of his course.	Efficiency of course format
In your opinion, what are the most important elements in writing an essay?	Conceptualization of essay-writing process
At this point, would you feel ready to study full time in English? If so, what makes you feel this way? If not, what makes you feel that way?	Perceived competence
How do you think Internet resources could be used in this type of course?	Value of Internet as pedagogical tool
Do you have preferences as to the type / topics of the texts that you read and summarize for this course?	Interest

Appendix 9

Knowledge questionnaire

Answer each of the following questions in the space provided.

How do you decide on a topic for an essay?

Once you have selected a topic, how do you decide what to write in your essay?

How do you structure your essay?

What do you include in the introduction of your essay?

In your opinion, what factors make an essay "good"? Be as specific as possible.

What do you do, if anything, after you have written your essay?

Appendix 10

Sample essay questions

Write an essay on **one** of the following topics. Your essay should consist of a number of well-developed paragraphs and should be approximately **three (3) pages, double-spaced**. You have one hour to complete your essay.

1. Travelling is a waste of time and money. Do you agree or disagree with this statement? Give specific reasons and examples to defend your position.

2. Smoking should be banned in all public places such as restaurants and bars. Do you agree or disagree with this statement? Give specific reasons and examples to defend your position.

3. Email is the best way to communicate with your boss. Do you agree or disagree with this statement? Give specific reasons and examples to defend your position.

Appendix 11

Motivation questionnaire subscales

1	The thought of writing an essay in English makes me stressed.	Pressure
2	I think reading is important.	Perceived Value – reading
3	Most of the time, I have no difficulty writing in English.	Perceived Competence – writing
4	For an English course to be beneficial to me, I must be able to work at my own pace.	Control over course
5	I read to improve my English vocabulary.	Learning Goal – reading
6	For me, doing written assignments in English is a waste of time.	Perceived Value – writing
7	I was forced to take this course; it was not my choice.	Perceived Choice
8	I do not feel the need to take a course to improve my English skills since I already speak very well.	Perceived Competence – course
9	Reading articles on the Internet is a good way to practice my English reading skills.	Perceived Value – Internet
10	Each time I do a reading exercise in English, I try to make fewer mistakes than the last time.	Perceived Performance
11	I enjoy reading in English.	Interest
12	It is important for me to take a course to help me improve my English skills.	Perceived Value – course
13	Each time I write an essay in English, I try to express my ideas and thoughts more and more clearly.	Learning Goal – writing
14	I feel that my English skills are strong enough to study in English at the college level.	Perceived Competence – course
15	It often happens that I don't understand written questions.	Perceived Competence – reading

16	I believe that by working on improving my reading skills in English, I am investing in my future professional success.	Perceived Value – reading
17	In order for an English course to be useful for me, I must have a say in how the course is organized.	Control over course
18	Reading in English allows me to learn new things about the world.	Learning goal – reading
19	I think that is important to be able to write well in English.	Perceived Value – writing
20	I took this course because I wanted to.	Perceived choice
21	Taking an English course is important for improving my English writing skills.	Perceived Value – course
22	The Internet provides me with many activities for improving my English skills.	Perceived Value – Internet
23	When writing essays in English, I am constantly trying to do better and better.	Perceived Performance
24	In my opinion, reading is a waste of time.	Perceived Value – reading
25	By taking an English course, I am improving my chances of achieving academic or professional success.	Perceived Value – course
26	When writing essays in English, I am always trying to improve my syntax and grammar.	Learning Goal – writing
27	I took this course because I had to.	Choice
28	I feel that I have developed the written skills that are necessary for success at the college level.	Perceived Competence – writing
29	I have difficulties understanding what I am reading in English.	Perceived Competence – reading
30	I enjoy writing in English.	Interest

31	I feel confident when I have an English essay to write.	Perceived Competence – writing
32	Writing essays allows me to clarify my ideas and make them more precise.	Learning Goal – writing
33	I took this course because I had no choice.	Choice
34	I do not think that the Internet provides me with ways of improving my English skills.	Perceived Value – Internet
35	Every time I write an essay, I try to make fewer mistakes and get a better grade.	Perceived Performance
36	I take pleasure in improving the quality of my written English.	Interest
37	I feel stressed when writing an essay in English.	Pressure
38	In my case, taking an English course is a waste of time.	Perceived Value – course
39	Every time I write an essay, I work on improving the quality of my written English.	Learning goal – writing
40	My English reading skills are not yet strong enough to allow me to study at an English college.	Perceived Competence - reading
41	I have difficulty finding the main idea in a reading.	Perceived Competence – reading
42	I felt like I was forced to take this course.	Choice
43	I believe that by developing my reading habits, I am improving the quality of my English.	Perceived Value – reading
44	In general, I am able to do the written work that is assigned to me.	Perceived Competence – writing
45	For an English course to be worthwhile, I must be given a choice as to how I want to develop my skills.	Control over course

46	I feel relaxed when I write essays in English.	Pressure
47	Writing is an opportunity for me to learn more about myself.	Learning Goal – writing
48	Writing essays is important for developing one's knowledge of the world.	Perceived Value – writing
49	I do not feel nervous or stressed when writing an essay in English.	Pressure
50	I am happy to be in this English course; I am here because I want to be.	Choice
51	Reading through articles or other texts on the Internet is a good way to improve my knowledge of English vocabulary.	Perceived Value – Internet
52	When writing an essay, I always force myself to do the best that I can.	Perceived Performance
53	I love the English language.	Interest
54	What I am learning in this English course will be useful to me in my future studies, regardless of my program of study.	Perceived Value – course
55	I read to develop my own knowledge of the world.	Learning Goal – reading
56	I feel anxious when I write essays in English.	Pressure
57	I do not need to take another English course to improve my writing skills.	Perceived Competence – writing
58	Most of the time, I think that the reading I have to do for my English course is easy.	Perceived Competence – reading
59	I feel that it was not my choice to take this course.	Choice
60	I feel pressure when writing an essay in English.	Pressure

61	I organize my time before doing my homework.	
62	When I am reading an article, I write down, underline or highlight the important points in the article.	Strategy
63	When writing an essay, I never give up, even if I am having difficulty expressing my thoughts in English.	Persistence
64	Before starting my homework, I read the instructions to get an idea of how long it will take me to complete the assignment.	Strategy
65	To do my work, I choose a place where I will not be distracted.	Strategy
66	When I am reading an article or a text, I re-read the more difficult passages in order to understand them better.	Persistence
67	Before handing in an essay, I re-read what I have written and try to correct as many of my errors as possible.	Strategy
68	When I am writing an essay for a course, I make sure that I understand all of the instructions given by the teacher.	Strategy
69	I use dictionaries or electronic translators to help me with my homework.	Strategy

70	When I am reading an article or a text, I continue reading, even if I am having difficulty understanding some of the author's arguments.	Persistence
71	Before submitting any written work, I look over the quality of my written English.	Strategy
72	When I am reading material for a course, I make sure that I am in a place where I will be able to concentrate.	Strategy
73	Even when it is difficult, I continue working on an essay until it properly expresses my thoughts.	Persistence
74	When a teacher returns a corrected essay to me, I take the time to review it in order to understand my English mistakes.	Strategy

Appendix 12

Knowledge questionnaire codebook

Q	Code	Definition	Example from Student Responses
1	Arguments	The student states or implies that he/she chooses a topic based on the arguments or examples that he/she can come up with to support the main idea. The students often refers to knowledge to generate these examples.	*First I understand a main idea and write it and also write a 3 main thing I will talk about* (15,I,1)
1	Extrinsic Interest	The student states or implies that he/she chooses a topic based on what would interest a reader.	*Something that every body wants to talk about.* (18,I,1)
1	Intrinsic Interest	The student states or implies that he/she chooses a topic based on what interests him/her or what he/she would enjoy writing about.	*I simply choose a topic that interests me the most. Because how I will concentrate and have fun in writing my essay depends on the subject.* (6,I,1)
1	Knowledge	The student states or implies that he/she chooses a topic based on what he/she already knows or has experienced. Some students refer to this as the "easy" way because they have something to say and can write a lot about it.	*I take the topic that I know more about it.* (3,I,1) *I sometimes use my own expreince, a friend or any of my relatives.* (17, I,1)
1	Needs	The student states or implies that he/she chooses a topic based on his/her professional or academic needs.	*According with my needs…* (36, I, 2)
1	No choice	The student states or implies that he/she has no choice in selecting a topic for an essay.	*I have no choice, because the topic is usually given by the teacher.* (19,I,1)

1	Sources	The student states or implies that he/she chooses a topic based on sources or documentation he/she might have, including magazines, journals, books, TV news or the Internet.	*Reading Novels, magazines, once know the information we can decide to choose the topic.* (11,I,1)
1	Think	The student states or implies that he/she chooses a topic by "thinking", but offers no information on what this "thinking" involves or how it helps him/her select a topic.	*think of it* (23,I,1)
1	Title	The student states or implies that he/she chooses a topic based on whether or not it has a good or interesting title.	*my topic must be a cool name…* (21, I, 1)
1	Understand	The student states or implies that he/she chooses a topic that he/she understands well.	*I see if I understand the topic well…* (8,I,1)
2	Arguments	The student states or implies that he/she chooses what to write based on the arguments he/she will use in the essay. This can include ideas and examples to support the topic, and for several students is related to the concept of essay structure (or ABC).	*I start thinking about all the arguments. And I choose the better one, to prouve that I'm right.* (3,I,1)
2	Explaining topic	The student states or implies that he/she decides what to write by just explaining or describing the topic (i.e. sharing his/her	*I don't know I just try to explain the topic as well as I can.* (22,I,1)

		knowledge on the topic).	
2	Sources	The student states or implies that he/she decides what to write by consulting secondary sources or documentation he/she might have (e.g. magazines, news articles, journals, books, or the Internet.)	*in resent stuff* (18,I,1)
2	Strategy	The student states or implies that he/she chooses what to write based on a certain strategy that he/she uses. Strategies include outlining, brainstorming, and free writing. (Note: ABC structure is not included.)	*I write everything that comes up into my mind and try to put details and examples to suppost them.* (6,I,1)
2	Teacher	The student states or implies that he/she chooses what to write based on what he/she thinks the teacher wants.	*…depend about what the teacher wants in the essay* (5324, IV, 1)
2	Topic	The student states or implies that he/she chooses what to write based on the topic or that he/she "just writes" what comes to mind.	*I decide how and what to write in my essay by the topic that I have choose to write about.* (14,I,1)
2	Vocabulary	The student states or implies that he/she chooses what to write based on the vocabulary words that he/she can come up with related to the topic.	*I will write words related to the topic.* (32, II, 2)
3	Arguments	The student states or implies that he/she structures an essay based on arguments, evidence, or examples.	First, I talk general about my topic and what is my essay talking about. *Then I will talk detail about that and give some example.*

			(2,I,1)
3	Body	The student states or implies that he/she includes a body or development in the structure of an essay.	*The second step is the body's essay, where all the topic is explained.* (22,I,1)
3	Conclusion	The student states or implies that he/she includes a conclusion or an ending in the structure of an essay.	*…and finally finish with a conclusion or an ending point.* (16,I,1)
3	Introduction	The student states or implies that he/she includes an introduction in the structure of an essay.	*…the introduction that explane what the essay is talking about…* (15,I,1)
3	Outline	The student states or implies that he/she uses an outline to structure his/her essay. This is actually an answer to the previous question, but since it implies some use of structure, it was not disregarded.	*with a plan* (45,II,2)
3	Paragraphs	The student states or implies that he/she structures an essay by breaking it up into paragraphs, but does not specify what he/she includes in each paragraph.	*mostly 3 paragraph* (23,I,1) *Step by step* (11,I,1)
3	Topic	The student indicates that he/she structures an essay based on the topic of the essay.	*short introccion of the topic* (22,I,1)
4	Audience	The student states or implies that he/she addresses the reader in the introduction or tries to capture the attention of the reader (e.g. hook).	*I will include some questions to the reader.* (7,I,1) *Usually, I come up with a story or a fact that will lead to my topic.* (27,I,3)
4	Examples	The student states or	*quote*

		implies that he/she includes examples in the introduction.	(II,1,gg)
4	Main idea (=thesis)	The student states or implies that he/she includes the main idea or an opinion on the topic in the introduction.	*I try to interduce the main idea of my topic.* (14,I,1)
4	Outline	The student states or implies the use of an outline of the essay or arguments/example in his/her introduction.	*…explain what will you write in the text.* (12,I,1) *…a method statement that shows what points will be covered in the following text.* (0242,IV,2)
4	Topic	The student indicates that he/she states the topic of the essay in the introduction of the essay (not to be confused with the main idea – no "slant" or point of view on the topic is given).	*I include the subject that I'm gonna write about it.* (8,I,1) *The situation in general without giving my point of vue.* (30,I,2)
5	Arguments/support	The student states or implies that the quality of the arguments, ideas and examples are what make an essay "good".	…*strong arguments that make the readers believe in the writer.* (6,I,1)
5	Clarity of expression	The student states or implies that an essay is good if the expression in the essay is clear, the ideas are coherent, the writer stays on topic and avoids repetition.	*Clear thought, clear words, clear examples* (3,I,1)
5	Conclusion	The student states or implies that an essay is good if it has a strong conclusion.	*…write strong conclusion.* (B,IV,1)
5	Content	The student states or implies that an essay is good if the information or content included is good.	*Include all the good informations that I have to write.* (108,II,1)

5	Creativity	The student states or implies that an essay is good if it demonstrates creativity / originality on the part of the author	*Creativity* (20,I,1) *…original ideas…* (hh,IV,1)
5	Grammar/vocabulary	The student states or implies that an essay is good if the grammar, spelling, sentence structure and/or vocabulary are good.	*Good words and sentences make an essay good.* (11,I,1)
5	Introduction	The student states or implies that an essay is good if it has a strong introduction.	*…the essay should be well introduce* (5324,IV,1)
5	Length	The student states or implies that an essay is good if it is not too long.	*A good essay is short and sweet* (16,I,1)
5	Sources	The student states or implies that an essay is good if the quality of the sources is good (e.g. quality of newspaper articles, internet resources, etc.)	*the quality of information* (20,I,1)
5	Structure	The student states or implies that proper structure and organization are what make an essay good.	*When it has the nice structure* (4,I,1)
5	Thesis Statement	The student states or implies that an essay is good if it has a strong thesis statement.	*…concentrates to one's thesis statement…* (2328,IV,1)
5	Topic	The student states or implies that an essay is good if it has a good, interesting, or exciting topic.	*Depends on the topic* (19,I,1) The inspiration is, for me, the factor that makes an essay "good". If you don't know what to write it is sure that the result is not gonna be good (for you). (45,I,3)
5	Transitional words	The student states or implies that an essay is good if it has transitional words.	*some adverbs like firstufal, finaly* (10,I,1)

6	Correcting	The student states or implies that after writing an essay he/she rereads his/her essay and corrects mechanical/grammatical errors including sentence structure..	I correct it. (30,I,2)
6	Editing for Meaning	The student states or implies that after writing an essay he/she edits the text and/or the structure of the text to ensure that it conveys the intended meaning and that the expression and sequence of ideas is clear.	I revise it so to be sure my ideas are clear and strong enough to convince my reader… (0986,IV,2)
6	Nothing	The student states or implies that after writing an essay he/she does nothing i.e. hands in the essay to the teacher immediately.	*I do nothing.* (31,I,2)
6	Peer Editing	The student states or implies that after writing an essay he/she asks a peer to read the text and make suggestions regarding grammatical errors and meaning.	*let some one else read it* (33,I,2)
6	Reading Out Loud	The student states or implies that after writing an essay he/she reads the text out loud and listens for mistakes or awkward sounding passages.	*I read out loud and correct speling and grammar*. (32,,I,3)
6	Reflect	The student states or implies that after writing an essay he/she reflects on what he/she wrote and thinks about whether or not to add more to the essay.	*we think about it.* (56,III,1) *I'll think more and add something more if it needs.* (57,III,1)
6	Teacher / TLC staff	The student states or	*maybe talk to my teacher*

		implies that after writing an essay he/she speaks with his/her teacher or a TLC staff member and asks for feedback.	(52,III,1)

Appendix 13

Essay coding sheet

Semester: _____
Subject #: _____
# of words: _____

	YES ☑	NO ☑	Somewhat ☑
Introduction			
• Hook (attention grabber) at beginning	☐	☐	☐
• Introduction of topic (general)	☐	☐	☐
• Thesis Statement / Main Idea	☐	☐	☐
• Outline	☐	☐	☐
• Separate paragraph	☐	☐	☐
Body			
• Separated into paragraphs	☐	☐	☐
• Each paragraph has a topic sentence which relates to the thesis.	☐	☐	☐
• Each paragraph has only <u>one</u> central idea.	☐	☐	☐
• Each paragraph has an explanation and/or examples to support the argument / topic sentence	☐	☐	☐
If yes, type of support:			
☐ Personal experience			
☐ Prior knowledge			
☐ Secondary sources / evidence			
☐ No support – essay is descriptive, not argumentative			
Conclusion			
• Return to main idea	☐	☐	☐
• Summary of main arguments	☐	☐	☐
• Separate paragraph	☐	☐	☐