The Tablet PC: An Interactive Teaching Tool for Spanish Language and Literature Courses

José F. Bañuelos-Montes, Dolores Flores-Silva

(Modern Languages Department, Roanoke College, Salem, VA, USA)

Abstract: The educational classroom has been transformed by many technological advances which enhance student learning (Mock, 2004). The Tablet PC is a specific learning tool that can influence the way students learn Spanish language and literature. The authors of this investigation propose a twofold method in teaching with the TPC: (1) to improve the content and form of the written target language; and (2) to improve students' ability to analyze literature. A survey given to students of Spanish Composition and Literature in fall 2011 reveals a constructive analysis of the effective implementation of this learning technology to enrich students' writing and poetic analysis. The data collected indicates that the TPC increased students' engagements in the learning of Spanish, assisted them in recalling prior information, provided them with a learning guide for taking notes and introduced them to the appropriate application of PowerPoint presentations to reinforce and augment their understanding and retention of the presented material.

Key words: enhance students' learning, effective teaching tool

1. Introduction

In an age where technology is changing our world at a fast pace and thus playing a fundamental role in our daily lives, educators are beginning to face important challenges; how to facilitate student learning of the new generations who are becoming more literate with the new technologies in mode (Enriquez, 2010). Educators are seriously looking at the relationship that these technological tools have in furthering the learning environment. In this regard, researchers have stated that teaching is an area that demands instructors to consider every available educational tool-various techniques, formats, aids, and technologies-to offer their students the richest educational experience (Nilson, 2003). The demand to modify the traditional classroom into a more technology based learning setting has truly changed education at present and will continue to do so in the future.

The following analysis presents the authors' techniques for the effective implementation of the TPC into Spanish language and literature classes of varying levels of proficiency. The TPC was used as a digital whiteboard by connecting it to a projector to jot down ideas that could later be accessed electronically by both students and educators for review and/or to highlight an important point for future discussion or research. The authors will open their investigation by offering a brief overview of why the TPC can be an important tool for teaching. Then,

José F. Bañuelos-Montes, Ph.D., Associate Professor of Spanish, Modern Languages Department, Roanoke College; research areas: foreign languages. E-mail: banuelosmontes@roanoke.edu.

Dolores Flores-Silva, Ph.D., Associate Professor of Spanish, Modern Languages Department, Roanoke College; research areas: foreign languages. E-mail: flores@roanoke.edu.

they will proceed to present the literature supporting the usage of the TPC in their courses and its effects in the learning process of the Spanish student. Lastly, the authors will discuss their methodology and results of their investigation to shed light on what pedagogical approaches were followed to make the use of the TPC a successful teaching tool in their classes.

1.1 Why the Research Matters

After an investigation about the use of the TPC in advanced Spanish classes, the authors realized that there is little or no research at all supporting the use of it in their field. As the world of education continues to adapt to the changes that the new generations go through, certainly this has caused an impact on the development of new teaching methods. The authors believe that the TPC can enrich the teaching and learning environment, making the visual component a primary objective for student acquisition of class material. Consequently, the TPC can provide educators with different pedagogical angles to lead students away from the traditional instruction-centered lecture format (Enriquez, 2010). As the authors understand the role that technology plays in education, they developed a strategy to integrate the TPC in the teaching of Spanish and in the writing activities for improving language usage and literary analysis (Rogers & Cox, 2008).

1.2 A Brief Overview

Since students are arriving into a Spanish college classroom with prior knowledge in technology, the TPC can potentially influence the college classroom in a positive way if used appropriately. Subsequently there seems to be a growing number of students who are becoming visual learners because they observe and recall information just by seeing.

In the new millennium, Microsoft released the first TPC, a pen-based computing system that slowly, but gradually, gained popularity in the business world as it simultaneously started to find its way into the academic setting. It became widely used in the Social Science fields (Enriquez, 2010), but did not seem to be favored in the Humanities area. Students nowadays belong to the technological era, meaning they are proficient in the use of technology and effectively digital learners. We, language and literature educators, must explore different resources as well as teaching techniques that can embrace the new technological advances to further modernize education (Cicchino and Mirliss, 2004).

2. The Tablet PC: A Dynamic Technological Tool for Teaching Languages

The TPC assists educators to capture written notes that would normally be lost if written on a traditional blackboard. Furthermore, it offers the opportunity to manage PowerPoint presentations with more precision. For example, the multiple color pen function gives the choice to highlight essential points with regard to the information transmitted to the students. This information can be saved and viewed at a later time to stress or enhance a particular idea or to continue with a previous class discussion with greater fluidity. The TPC facilitates a wealth of information as educators enabled observation directly; i.e., student-to-student and student-to-educator interaction. Specifically in the Spanish classroom, this interaction was based on collaborative learning activities (vocabulary and grammar enrichment, poetic analysis and literary devices reviewed through short passages of stories, etc.) that permitted the authors to detect evidence of the importance of the TPC in a direct instructional setting providing information that led to students' reasoning of the material presented (Clark, Kirschner, Sweller, 2006).

The first time the authors of this article contemplated the usage of the TPC in the Spanish classroom, the concept evolved through a workshop on technology during the Lilly Conference in the spring of 2009. One of the speakers at that conference presented effective ways to implement the TPC in the Spanish literature class. The authors began to brainstorm ideas on how to apply the device in their department, but due to the lack of financial resources the project did not move forward until a year later when TPC's were purchased for tenure-track instructors. In the meantime, the authors continued to identify the types of exercises that could be carried over to the TPC in order to minimize time and effort invested from both educators and students while working with written tasks. Two classes were selected for the investigation: Advanced Spanish Composition and Advanced Latin American Literature. The authors selected detailed activities already designed for the teaching of the aforementioned courses such as grammar letters that served as the starting point in the implementation of the TPC. These grammar activities had previously followed the traditional way of reviewing grammar: educators would make copies and hand them to students and they, in return, submitted their reviewed copy to the educators during the following class. The grammar letters were usually reviewed in class to check for understanding through the educators' reading of the correct answers and students writing them down in turn. The only visual element involved in this activity was the hard copy given to students as a homework assignment which they could read in their own time. But with the implementation of the Tablet PC, teaching grammar became more engaging. Figure 1 is an example of a completed grammar letter using the Tablet PC stylus pen showing in different color markings the grammar mistakes:

Nombre/Name:_____   **Puntos/Points: ___/25** = ____

Follow the chart to correct only the grammar mistakes highlighted.   The chart at the end of the grammatical letter is the format you must follow to make the necessary changes.   Make sure you write an explanation to the grammar problem.

| ⟶ | (D)Spelling | ⟶ | (A+) Accent |
| ⟶ | (G) Gender | Orange ⟶ | (N) Number |

A los estudiantes de españa y latinoamerica muchas veces les sorprende la preocupacion de los estudiantes Estadounidenses del no de escoger las clases.   En este país, estudiantes miran con ansiedad el horario de clases y consultan a sus consejeros. Esperan que haya espacio en las clases deseadas pero frecuentemente no hay ningún espacio. Escoger entre mucha clases obligatorias y ofrecidas por todas las facultades de la universidad es . A veces el estudiante recibe el horario perfecto. No escomún que un estudiante de tenga que seguir una clase de música o de arte, por ejemplo, tenga requisitos generales, cursos de la carrera, y tal vez otra especialización . En países hispanos el proceso de planear el horario es generalmente muy . En primer lugar, típicamente no es el estudiante que lo planea. Hay universidades públicas y privadas. El catalogo contiene los lista de clases para los estudiantes de tercer año, de periodismo, por ejemplo, y todos los estudiantes de tercer año de esa especialidad los siguen, a condición de que salgan bien en los cursos de este semestre. En no hay ningún curso que dure un semestre-completa por todo el escolar. No hay muchos cursos electivos y no mucha variación en el orden de los cursos. Además, estudiantes terminan sus estudios generales con el Bachillerato y ahora en la universidad se enfocan en la carrera. Por eso, toda las clases normalmente son de la misma facultad.[1]

Error/Mistake	Corrección/Correction	Código/Code	Explicación/Description
espana	**E**spa**ñ**a	**D**	Necesita mayúscula y la "ñ"
latinoamerica	**L**atino **A**mér**i**ca	**D/A+**	Necesita mayúscula Acento: palabra aguda
muchisimos	much**í**sim**a**s	**A+/G**	Acento: Palabra esdrújula y palabra femenina

Figure 1   An Example of A Completed Grammar Letter Using the Tablet PC Stylus Pen

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[1] Sample letter taken from *Aprendizaje: A Course in Spanish Composition* (2nd ed.).

The authors believe that a grading rubric is essential to hold students accountable for their own work. The following rubric was used for assessing the grammar letter:

Table 1   Grading Rubric: Grammar Letter (*Refers to the Number of Mistakes)

Total Points	25-24	23-21	20-19	18-17	16-15
Description	1-2*	3-4*	5-6*	7-8*	9-10*
Correction	1-2*	3-4*	5-6*	7-8*	9-10*
Code	1-2*	3-4*	5-6*	7-8*	9-10*

The authors identified the grammar letters as an appropriate activity because students were able to work on specific linguistic elements; at the same time, they practiced the activities on their own. The grammar letters were submitted via e-mail and were reviewed by the educators who returned them to students in the following session so that they could continue practicing polishing the grammar mistakes. Also, the educators used this opportunity to answer any questions students had or to address common patterns of crystalized errors.

The TPC project was first envisioned as a trial and error procedure with the intention of introducing students to a new approach to the teaching and acquisition of writing and reading skills. Because it was a trial and error process, the first attempt did not require collecting information for the implementation of new strategies to teach Spanish composition and literature through a technological device. But at the end of the semester, the authors carried out a brief survey to gather results about the use of the TPC and its effectiveness to reinforce the learned material. The overall positive student response encouraged the authors to propose a better organized plan of action to integrate it in the spring and fall semesters of 2012. Consequently, a more structured classroom environment was created to heighten student learning, since the grammar letters were only used for the composition course.

2.1 The Tablet PC in the Spanish and Literature Classroom

The teaching with TPCs has been a success in the field of chemistry and physics. According to educators in this area, the usage of this device allows them to utilize material that requires interaction among the students. Social Science educators use it to explain how to solve equations or illustrate dynamic processes that may be difficult to prepare in advance through a medium such as PowerPoint (Rogers & Cox, 2008).

After the implementation of the TPC in their Spanish classroom, the authors came up with several outcomes for language educators. The TPC offers opportunity to manage a paperless course saving time to dedicate it to more meaningful course preparation. It also permits the educators the chance to assess students' written work more precisely as they diminish their workload and have a better control of it in order to evaluate general grammar observations by employing the multiple color functions of the digital pen. Sending feedback electronically sped up the process of written assignment submissions since students felt more comfortable receiving their work via e-mail than stopping by the educators' offices to pick them up or carrying a load of papers to hand them in. It was to the authors' surprise that the learning or reviewing of a poem or written text, for example, became more relevant for students when they were able to directly visualize the authors' comments in a variety of ink colors to emphasize different grammar and/or vocabulary as well as content. In relation to literature, the highlighted stylus markings stressed the importance of analytical and critical thinking skills in the understanding of the usage of literary devices such as symbol, metaphor, image, etc. Figure 2 is an example taken from an archived lecture in Spanish literature about Alfonsina Storni's poem discussion on the theme of female social purity, detailed in the first stanza and highlighted in yellow:

Figure 2   Poem Discussion

The objective for studying the poem "Tú me quieres blanca/You want me white" (Chang-Rodriguez & Filer, 2004) was to introduce students to how poetic language was used to project different ideas of the condition of women in the poet's time in Argentina. The intent was to dissect complex information and to visually introduce students to group analysis and, in turn, learn together the steps needed in order to understand the purpose of a poem. The educators believed that this approach decreased student aversion to reading and interpreting poetry through a traditional piece of paper.

In another instance, students and educators conjointly pointed out vocabulary that helped students to establish a shared vision of a cultural and/or historical element. When this was done, some remarkable findings emerged as in the poem by Ruben Dario, "Roosevelt" (Chang-Rodriguez & Filer, 2004). Figure 3 displays students' historical analysis through the relationship of words "Walt Whitman" and "tigres", both marked in pink color:

Figure 3   Students' Analysis

The aforementioned historical discovery by those two simple words became a learning aftermath that had not been previously considered to encourage a long discussion. The authors would like to point out here that the designed lesson plan geared toward open ended discussions, and those students, as they are drawn visually to the

TPC, could discover hidden messages independently and/or spontaneously. This discovery became a central focus for the enrichment of class discussions elevating the degree of critical thinking skills.

In another instance, the TPC was used in literature to record notes permanently reviewing the information and making substantial changes for more accuracy and comprehension of the topic. Figure 4 displays the reading passage and Figure 5 evidences students' comments inserted in the chart created by the authors about the 19th Century Romantic novel *Sab*:

-Sí, señor, jamás he sufrido el trato duro que se da generalmente a los negros, ni he sido condenado a largos y fatigosos trabajos. Tenía solamente tres años cuando murió mi protector don Luis, el más joven de los hijos del difunto don Félix de B…pero dos horas antes de dejar este mundo aquel excelente joven tuvo una larga y secreta conferencia con su hermano don Carlos, y según se conoció después, me dejó recomendado a su bondad. Así hallé en mi amo actual el corazón bueno y piadoso del amable protector que había perdido (Gómez de Avellaneda, 45).

Figure 4   Reading Passage Sample

Figure 5   Students' Comments

During the class discussion, students' ideas were projected and recorded by the authors giving students a sense of collective achievement as their ideas encouraged an open discussion. The material presented was archived and uploaded to an Inquire database used by the College to store information for students to download and review at a later time.

Furthermore the concept of cooperative work steered the authors to emphasize the importance of research when students used the TPC. Taking into consideration the analysis of literature, as students were able to visualize the literature projected on the screen, their intuition to decipher abstract concepts led to the discovery of research topics for writing final research papers. As students were more attuned to the visual component, their response eventually drove the authors to observe how the TPC assisted students in separating the important components of a literary text. If given a hard copy of a piece of literature which required immediate focus to the entire work, students could potentially be dissuaded from analysis because there is not emphasis on active learning the style they are typically accustomed to nowadays (Rogers & Cox, 2008).

2.2 Classroom Structure

As language teaching requires group work to practice the target language, the authors needed to find the best possible ways to communicate the importance of this dynamic in the classroom. It was necessary for the authors to state in the syllabus as well as in the introduction of the classes targeted for the use of the TPC, the relevance of the effective classroom management for the success of cooperative work group experience during the class project (Mandel, 2003).

After students were provided with the proper guidelines and expectations, the authors then proceeded to offer students strategies for writing, proofreading and revising. The guidelines consisted of a list of correction codes and the use of meaning of different ink colors and of several formats to familiarize them with the project. Tables 2 and 3 are examples of the self-correction codes and correction sheet formats for written work and Table 4 is the grading rubric:

Table 2 Correction Codes

M+	Upper case/Mayúscula
M-	Lower case/Minúscula
A+	Accent/acento
A-	No accent/No acento
Inf./ PI	Verbo Infinitivo/Presente de Indicative
Pret.	Pret./Pretérito
Imp.	Imperfect/Imperfecto
G	Gender/Género (masculine or feminine)
#	Number/Número (singular or plural)
S/V	Agreement/Concordancia: Sujeto + Verbo
S/E; P/p	Ser or Estar/Por or Para
Conj.	Conjugation/Conjuga el verbo
D	Spelling/Deletreo
Adj.	Adjective/Adjetivo
Contr.	Contraction/ Contracción (a + el = al; de + el = del)
NE/RW	I don't understand: visit the tutor/Rewrite the phrase
V/AV/AW	Necesita verbo/ Otro verbo/Otra palabra
↑	Needs article/Artículo: (el/la/los/las; un/os, una/s)
English	Possessive/Posesión Juan's carro = El carro de Juan
Cond.	Conditional/Condicional
Fut./ FP	Future/Futuro Future Perfect/Futuro Perfecto

Table 3 Correction Sheet

Observación	Corrección	Descripción	Código	Página
Han	Tenido	Palabra-Acción	PP	Compound Tense:#145
Las	Los	Palabra-Modificadora	↑	Definite Article: #45
Connection	Conexión	Palabra-Concepto	D	Spelling: #77
Television	Televisión	Palabra-Aguda	A+	Needs Accent: #13

Table 4   Grading Rubric: The Descriptive Composition

Categories	Points	Points received
Clearly describes the image of the person or object	15	
Is rich in descriptive, sensory and figurative rhetoric to describe the person or object of choice	20	
Logical organization	20	
Precision of word choice (nouns, verbs, adjectives)	15	
Grammar (spelling, punctuation, etc.)	20	
Title: appropriate and engaging	5	
Correction sheet	2.5	
First draft	2.5	
Total points	100	

As students learned to use the correction code system, the authors made observations on their written papers by employing the ink color pen as demonstrated in Figure 6:
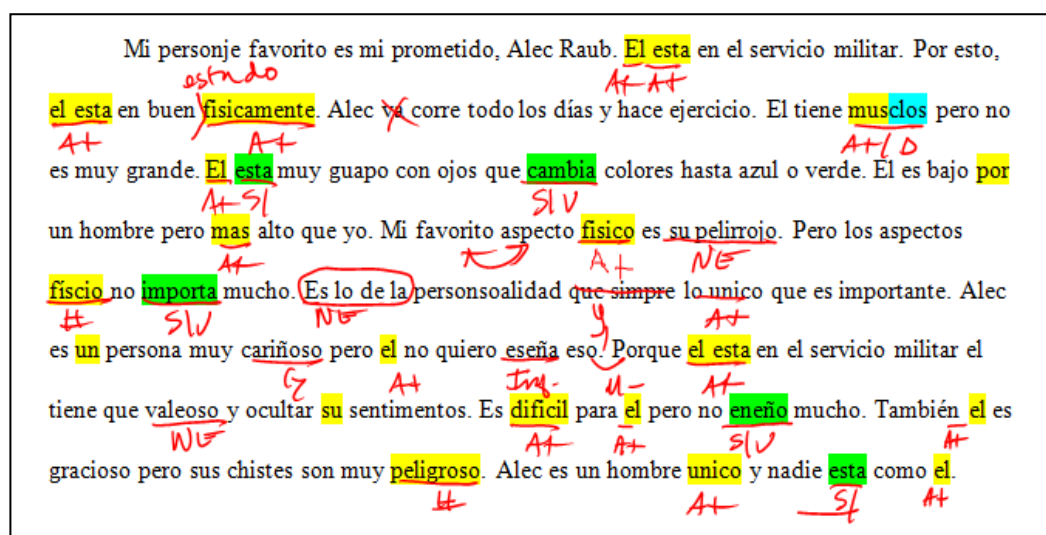
Figure 6   Educator Correction Sample

The different ink colors (yellow, blue and green) address different grammar components such as accents, subject/verb agreement, and spelling. Students were able to see in an educational distinct, clear and fashionable way what areas they needed to improve in order to enrich their writing skills. This approach challenges students to solve "authentic" problems or acquire complex knowledge in information-rich settings based on the assumption that having learners construct their own solutions leads to the most effective learning experience (Clark, Kirschner and Sweller, p. 76). This approach helped students to become tutors and/or teachers by accessing prior learned information to resolve issues in groups that could potentially pose problems if completing the assignments individually. This teaching-learning interaction was fundamental in the learning process and the efficacy for limiting error at the time students engaged in correcting their own written work. Additionally, it created a collaborative learning environment in which students became active problem solvers, contributors, and discussants (Barkley, Cross, Major, 2005). Finally, students were more likely to become effective co-teachers when they explicitly teach each other and work as study buddies (Thousand, Villa and Nevin, 2007).

3. Data Analysis

Five questions (Table 5) were asked to students in the composition and literature class to determine the effective use of the TPC for learning and developing writing and analytical skills. These questions intended to draw on student feedback to modify and/or redirect the implementation of the TPC as a teaching tool:

Table 5   Five Questions Were Asked to Students in the Composition and Literature Classes

Do you feel that the grammatical letters helped you improve your writing skills?
Do you feel that the implementation of the Tablet PC in grammar corrections impacted your writing process?
Do you believe that the implementation of the Tablet PC assisted you in paying more attention to the writing process?
Do you believe that the implementation of the Tablet PC assisted you in producing stronger thesis statements and thematic sentences?
Do you believe that the Tablet PC is an essential tool for teaching Spanish composition?

Their responses (refer to Figure 7 in the results category) were very helpful to the educators to determine better approaches for the implementation of the TPC in future language and literature classes to enhance students' learning.

4. Results

The usage of the TPC in writing and literature Spanish classes at the researchers' college has been an innovative pedagogical tool in this digital era to enhance students' writing, reading, and critical thinking skills. As researchers began to form part of the Pedagogical Book Club in their college, they had the opportunity to present the TPC at two faculty workshops in spring and fall 2011. Because of the continued research interest of the authors' department, a proposal was submitted and accepted to Virginia Tech's Conference on Pedagogy and Technology in spring 2012. The following (Figure 7) illustrates the students' interest in working with the TPC as an pioneering method to practice and develop writing and literary analysis techniques. In order to gather objective evidence of the effective implementation of the TPC, the authors' designed a survey with five questions that required students' feedback.
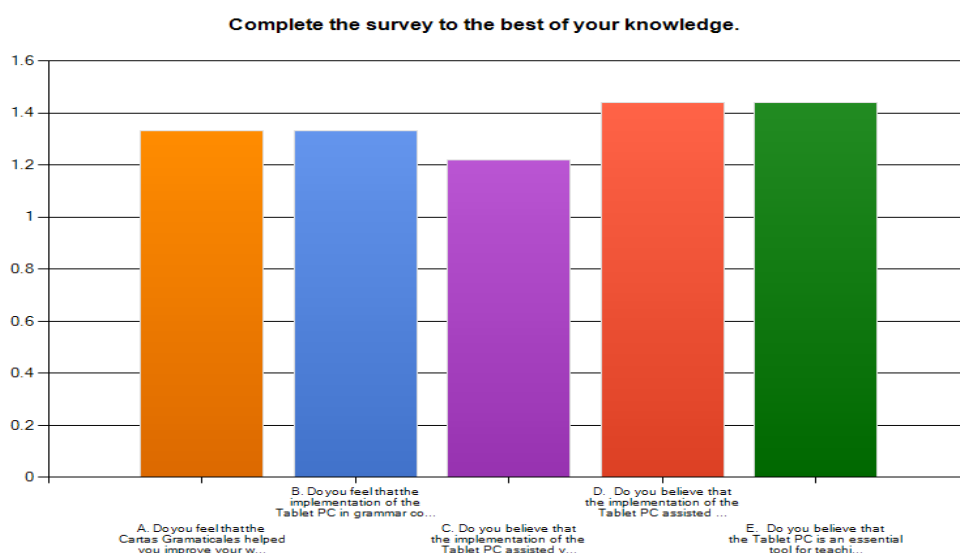

Figure 7   Students' Interest in Working with the TPC as a Pioneering Method to Practice and Develop Writing and Literary Analysis Techniques

The post-survey suggests that students seemed to have favored the usage of the TPC as an alternate method for teaching and learning to assist them in furthering their language and literary analytical skills. Questions 2 through 5 were important because they directly addressed the TPC for its future implications in the Spanish language and literature classroom. Since the TPC received positive acceptance, this survey generated much optimism to continue conducting further research in order to discover alternate methods. One approach is to write a grant to request funds for the purchase of ten TPCs and involve all the Spanish instructors of the Modern Languages Department in a series of workshops to collaborate to form further classroom ideas for the TPC.

4.1 Outcomes

The educators did find that aside from the capability to structure class lectures and produce lively class discussion, the TPC impacted learning in various ways:

Students favored the multiple colored pen to differentiate the specific components of the material presented
Students saved their annotated material for future reference or can download the educators' lecture notes from a database
Students re-displayed previously covered material to reinforce their understanding of a particular topic discussed in class
Instructors maintained eye contact with students as students maintained eye contact with the screen
No mess with traditional chalk or toxic chemicals of dry-erase markers
No messy writing on papers as educators could erase and record updated information at the moment of the explanation or analysis

5. Implication and Limitations

The main implication derived from this project relates to the shortage of TPCs in the Language Resource Center of the College where the authors work. Students expressed their interest in working directly and/or individually with a TPC to insert their own comments at the moment they engaged in group activity. The authors' findings suggest that the ideal environment to achieve a more successful Spanish language and literature project, students must be provided with or own a TPC. This will ensure that every student can review and/or comment on their work outside of the classroom at any given time. However, being aware of the limitations of financial strains on students and/or parents as well as language departments, financial support is imperative to continue to explore other avenues that can lead to more in-depth research of the TPC and its effectiveness in the teaching of Spanish.

6. Conclusion

The students' survey concluded that they did improve their learning through the use of the TPC. Furthermore, the authors did see a correlation between learning and the visual component which was not addressed in the questions, but it is a potential area for future research. They felt that the ink color possibilities allowed students to experience learning in an easier hands-on way by separating and highlighting significant characteristics of a written and literary text. While there is still much to discover, the findings in this primary project have provided the authors with a solid and optimistic foundation for the implementation of effective usage of the TPC in the classroom. They also found that the TPC encouraged positive interaction between students in cooperative learning groups, as well as provided a visually stimulating style of active learning that is highly favored in our ever-growing technological world, hence engaging students in the classroom on a higher level.

References

Amelink Catherine T., Scales Glenda and Tront Jospeh G. (2012). "Student use of the Tablet PC: Impact on student learning

behaviors", *Journal of Engineering Education*, Vol. 1, pp. 1–17.

Barkley Elizabeth F., Cross K. Patricia and Major Claire Howell (2005). *Collaborative Learning Techniques: A Handbook for College Faculty*, Jossey-Bass: San Francisco, California.

Brown J. W., Lewis Richard B. and Harcleroad Fred F. (1977). *AV Instruction Technology, Media, and Methods*, McGraw Hill: New York.

Chang-Rodriguez Raquel and Filer Malva E. (2004). *Voces de Hispanoamerica: Antologia Literaria* (3ed.), Thomson Heinle: Boston, MA.

Cicchino Renee M. and Mirliss Danielle S. (2004). "Tablet PCs: A powerful teaching tool", *Proceedings of World Conference on E-Learning, Government Healthcare, and Higher Education*, pp. 543–548.

Clark Richard E., Kirschenr Paul K. and Sweller John. (2006). "Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching", *Educational Psychologist*, Vol. 41, pp. 75–86.

Cox James R. and Rogers James W. (2008). "Integrating a single Tablet PC in chemistry, engineering, and physics courses", *Journal of College Science Teaching*, Vol. 37, pp. 34–39.

Creswell J. W. (2008). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (3rd ed.), Upper Saddle River, N.J: Pearson/Merrill Prentice Hall.

Enriquez Amelito G. (2010). "Enhancing student performance using tablet computers", *College of Teaching*, Vol. 58, pp. 77–84.

Gómez de Avellaneda Gertrudis (1990). *Catherine Davies*, Manchester University Press: Manchester and New York.

Mandel S. M. (2003). *Cooperative Work Groups: Preparing Students for the Real World*, Corwin Press: Thousand Oaks, California.

Mock Kenrick. (2004). "Teaching with Tablet PC's", *Journal of Computer Sciences in Colleges*, Vol. 10, pp. 17–27.

Nilson Linda B. (2003). *Teaching at Its Best: A Research-Based Resource for College Instructors*, Anker Publishing: USA.

Reed Robert H. (2010). *The Impact of the Tablet PCs and Pen-based Technology on Education: Going Mainstream*, Purdue University Press: USA.

Thousand J. S., Villa R. A. and Nevin A. I. (2007). *Differentiating Instruction: Collaborative Planning and Teaching for Universally Designed Learning*, Corwing Press: Thousand Oaks, California.