

Interactive Student Notebooks And Higher Education: An Investigation Of Pre-Service Teachers' Comprehension Of Literacy And Assessment

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ABSTRACT

Interactive notebooks encourage students to actively engage and participate in the construction of knowledge and serve many purposes in the classroom. They can be used as personalized textbooks, working portfolios, study guides, reflection tools, as well as assessment tools. Researchers will share how the use of interactive notebooks in teacher education courses can enhance student learning, model collaboration, and better prepare pre-service teachers for licensure testing requirements.

Keywords: *interactive student notebook, pre-service teachers, instructional strategies, assessment tool, constructivism*

INTRODUCTION

Creating quality educators requires modeling of effective teaching practices. University instructors, seeking to maximize student engagement in their classes, incorporated the use of an interactive student notebook (ISN) as a teaching and learning tool. This hands-on tool allowed students to create a study guide to assist them on their licensure examinations while experiencing a research-based instructional strategy. Results indicated an overwhelmingly positive response to incorporating an ISN into higher education coursework. Participant responses indicated that 94 percent of participants believed that using the ISN positively impacted their learning experience.

THE RESEARCH PROBLEM AND PURPOSE OF THE STUDY

The purpose of this study was to determine pre-service teachers' perceptions of using an interactive student notebook (ISN) as a teaching and learning tool in the higher education classroom.

Researchers sought to answer the following: How does the implementation of an interactive student notebook (ISN) impact participants' overall learning experiences in the higher education classroom?

LITERATURE REVIEW

An interactive student notebook, also known as an ISN, is a tool that develops communication skills, cognitive organization skills, and a sense of responsibility for student learning (Marcarelli, 2010). An ISN provides students with the opportunity to write, graph, draw, respond,

observe, and self-assess simultaneously within one notebook (Carter, 2009). As the education field shifts from memorization of factual knowledge to a deeper conceptual understanding, interactive student notebooks can be utilized in the process (Aschbacher, 2006). Interactive student notebooks were created in the 1970s by Lee Swenson and his colleagues at Aragon High School in California. After the Teachers Curriculum Institute saw the improvement of instruction that the ISNs made, they officially adopted the idea of an ISN as a teaching tool in 1992 (Teachers' Curriculum Institute, 1992).

ISNs open communication lines between students and teachers. This communication can occur through student participation in analytic, as well as, nonanalytic writing. Analytic writing opportunities give students the ability to express their use of metacognition through higher-order learning and strategic thinking. Nonanalytic writing allows students the chance to recall and reproduce their knowledge based on lower-level skills found in Bloom's taxonomy and Webb's Depth of Knowledge (Lawrence, 2013). ISNs can also open the door of communication between school and home by allowing students to work academically with their parents. In the field of education, we are aware that the support of family is a strong indicator for student success. If we do not communicate with parents throughout a student's educational career, we have lost an integral part of the student's success (Carter, 2009).

Although an ISN is often thought of as a teaching tool, it can become a student's prized possession. Students usually decorate their personal notebooks giving them a sense of ownership and purpose. Most students, especially English Language Learners, often do not feel comfortable venturing into active dialogue as they fear being wrong. An ISN enables all students to explore their own ideas while still being participatory learners. By using ISNs, students can feel they have a safe place "to

discover, to learn, and to not have to be certain" (Carter, 2009, p. 8). With this ownership comes a responsibility to give their best effort and keep track of their work.

Students are constantly interacting with their notebooks whether they are adding vocabulary words or drawing diagrams. Therefore, the ISNs are always changing. In turn, this means that the interactive student notebooks serve as on-going forms of assessment. Some ISNs are set up so that students provide their entries on the left side of the notebook while the teacher provides feedback on the right side of the notebook. ISNs aid in timely feedback by allowing teachers and students to quickly evaluate the work that has been done by the student. Corrective and constructive feedback provided in ISNs can be used to redirect a student's understanding or clear misconceptions. In addition, feedback can be used to simply let a student know what they are doing correctly. Teachers are able to use ISNs as a type of formative assessment to guide instruction. ISNs can likewise be used during parent-teacher conferences as a tangible reference when discussing a student's progress. Educational theorist, John Dewey, once said, "Reflection makes meaning out of what was learned and then evokes new thinking from the new knowledge" (Mallozzi, 2013, p. 3.) ISNs provide a convenient place for students and teachers to reflect on the work done in the notebooks, which is an important part of learning as stated by Dewey.

An ISN is a dynamic tool created to increase organizational skills within students. By recording and pasting class materials into one notebook, students are less likely to lose their work. Teachers initiate the ideals of organization by having students create a table of contents for their ISN. By marking each page number to a corresponding section within the table of contents, students are being exposed to tasks that promote the organization of learning. Nonetheless, the ISN was not created to solely keep things organized;

its purpose was to organize the learning process, as well. According to Howard Gardner, there are eight multiple intelligences, or learning styles, that people develop. They include: linguistic, logical-mathematical, musical, spatial, bodily/kinesthetic, naturalistic, interpersonal and intrapersonal. Normally, students have a tendency to be stronger in some styles and weaker in others; however, they should be exposed to each style. The ISN gives teachers the opportunity to organize their lessons using different types of learning styles; therefore, students are being exposed to each of the multiple intelligences. While completing an ISN, students are using critical thinking skills to organize and process information. The outcome is a more creative, independent thinker, who is developing a greater understanding of the information being taught (Wist, 2006).

ISNs offer various applications that can be used to promote learning in the classroom. An ISN stimulates interaction with the text through written, oral, and illustrative forms. Communication between school and home is encouraged through the use of ISNs (Carter, 2009). Students form an appreciation for their work and gain a sense of responsibility through the creation of their very own ISN. Students and teachers alike are able to improve understanding by having the ongoing form of assessment and reflection that an ISN provides. Students' work and ideas are neatly stored and kept in ISNs; at the same time, knowledge gained from learning activities is being stored in the minds of the learners for easy retrieval. At first glance, an ISN may appear to be made up of cutting, gluing, and drawing alone. However, the creativity of the ISN is much deeper than art. ISNs develop a student's ability to communicate, foster responsibility, become an active learner in the grading process, and organize knowledge.

OVERVIEW OF THE STUDY

This quantitative study investigated pre-service teachers' perceptions of using an ISN as a

teaching and learning tool. Using a post-survey format, researchers used anonymous survey instruments to determine if participants believed that the use of an ISN positively impacted their learning experiences. Additionally, researchers examined the data to determine if participants planned on incorporating the teaching tool into their future classrooms. Participants were asked to respond to a 10 item Likert-scale survey, identifying their perceptions of the ISN as a classroom tool. This quantitative data was desegregated to answer the following research question: "How does the implementation of an interactive student notebook (ISN) impact participants' overall learning experiences in the higher education classroom?"

METHODOLOGY

This quantitative study was intended to evaluate participants' overall learning experiences as a result of implementing an ISN into higher education coursework. Prior to the start of this investigation, researchers prepared relevant and purposeful learning experiences to engage pre-service teachers in course content that integrated the use of an ISN. Participants were exposed to 15 weeks of instruction that incorporated the interactive journal into all classroom experiences. At the conclusion of the Fall 2015 and Spring 2016 semesters, data was collected using an anonymous survey instrument from students enrolled in the following courses:

- Teacher Education: Diagnosis and Evaluation
- Teacher Education: Classroom Approaches to the Teaching of Reading in the Elementary School

Several students were enrolled in both courses; however, they only completed one survey to avoid biased sample results. The sample population consisted of 63 pre-service teachers who were classified as Junior and Senior students, with at least 60 semester hours completed as represented

in Table 1. Survey results were analyzed and provided data from the student as well as the future teacher perspective.

Table 1
Sample Population: Major and Gender

Licensure Area	k-6	4-8	7-12
Male (n=8)	0	3	5
Female (n=55)	47	3	5
Total (n=63)	47	6	10

Note: n=63 participants; Grades 7-12 can be further broken down as follows: (a) Secondary History (n=4); (b) Secondary English (n=2); Secondary Biology (n=1); and Secondary Agriculture Education (n=3).

RESULTS AND DISCUSSION

Researchers analyzed the results collected from participants to answer the following research question: *How does the implementation of an interactive student notebook (ISN) impact participants' overall learning experiences in the higher education classroom?*

Pre-service teachers were asked to voluntarily participate in this research study to determine perceptions of the ISN as a tool to create a student-centered learning environment, comprehend course material, improve performance, and assess effectiveness of its use as a teaching strategy. Responses to each Likert-scale item are represented in Table 2. Approximately 97 percent of participants agreed or strongly agreed with the following statements:

- The use of Interactive Notebooks helped create a student-centered learning environment.
- The use of Interactive Notebooks helped improve my overall performance in this course.
- I would consider using Interactive Notebooks in my future classroom as a teacher.
- Interactive Notebooks are an instructional strategy that I would like to see used in other TEP courses.

Additionally, all participants, with the exception of one student, indicated they would use their ISN to prepare for their PRAXIS licensure examinations. Two students indicated a negative perception of the ISN as a classroom instructional tool as noted in Table 2.

Table 2
Participants' Interactive Notebooks Survey Responses

Question	SD	D	N	A	SA
This was my first experience using Interactive Notebooks.	7	2		6	48
The use of Interactive Notebooks helped create a student-centered learning environment.		1	1	6	55
The use of Interactive Notebooks helped me better comprehend course material.		1	2	7	53

The use of Interactive Notebooks helped improve my overall performance in this course.	1	1	10	51
Using Interactive Notebooks is an effective method of instruction.		3	6	54
I found the use of Interactive Notebooks more beneficial than courses that use traditional lecture-style teaching to disseminate course material.	2	1	9	51
I can use my Interactive Notebook as a study guide to prepare for Praxis Exams.		1	5	57
I would consider using Interactive Notebooks in my future classroom as a teacher.	1	1	8	53
Interactive Notebooks are an instructional strategy that I would like to see used in other TEP courses.	1	1	13	47
I would recommend Interactive Notebooks to others.	1	2	8	52

Note: n=63 participants; SD=Strongly Disagree; D=Disagree; N=Neither Agree/Disagree; A=Agree; SA=Strongly Agree

Researchers also wanted to determine if participants believed that using the ISN positively impacted their learning experience. Ninety-four percent of respondents responded “yes” with only three percent responding “no. Two participants did not respond to the prompt.

Investigators delved further into pre-service teachers’ perceptions of the use of an ISN by the following: “Please share any additional thoughts about your experience using Interactive Notebooks this semester.” Although responses were varied, several statements were common among participants as follows:

- All information is in one place, which makes it easier to study for the PRAXIS.
- This helped me understand the material.
- I knew I was receiving a grade so I put in more effort.
- I am more likely to remember the information.
- “I enjoy learning through visualization and hands-on experiences.”

- “Great tool!”
- “I like that [the ISN] makes class student centered; it was more like a discussion class.”
- The Interactive Notebook helped me be better prepared for the Praxis and was a beneficial study tool.”
- “The notebook allowed us to pay attention and not lose focus. Please continue to use these because they are beneficial to your students!”
- “I ... will be using it in my future classroom.”
- The Interactive Notebook was very beneficial and a useful study tool that made learning more hands-on rather than listening to lecture.”

Two participants indicated negative perceptions of using an ISN as a instructional tool; however, both participants indicated they would use their ISN as a study guide for the PRAXIS. The comments that corresponded to the negative perceptions were “It hurt my grade because what I did not think necessary I did not incorporate” and “For

me it was more of a hassle trying to make sure everything was in it.” Each student in the researchers’ courses had all materials and resources to use during class meetings. Pre-service teachers enrolled in these courses were asked to take all notes and complete all activities during class. Additionally, investigators kept an instructor ISN as well as an ongoing table of contents on chart paper to help students stay on track. If absent from class, students were responsible for making up any work missed and were provided with any materials from the prior class meeting. Researchers contemplated whether the negative perceptions were from the instructional tool itself or the students’ unwillingness to accept responsibility for not staying current with coursework.

CONCLUSION

Data from this study supports the value of using an ISN as a teaching a learning tool. As pre-service teachers embark on their journeys as new teachers, instructors in higher education must ensure they are equipped with resources to engage and motivate students to participate. Results from this study provided insight into pre-service teachers’ perceptions towards the use of an ISN as a teaching and learning tool; however, researchers must continue to integrate and refine the ISN based on suggestions from students. As previously mentioned, 94 percent of pre-service teachers believed that using the ISN positively impacted their learning experience; therefore, providing workshops work practicing educators is also needed to share this teaching and learning strategy. Only 14 percent of participants had experienced using an ISN; therefore, this would imply this is not common classroom practice. As educators, we must continue to model, implement, and assess the practices we implement into our classrooms to ensure we create future teachers who will teach the way they were taught as well as provide support to current teachers.

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