The Effectiveness of the Socratic Method in Developing Critical Thinking Skills in English Language Learners

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by

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Abstract

Critical thinking skills are an important topic of the United States' education system. This study examines the literature on critical thinking skills and defines them. The study also explores one specific teaching and assessment strategy known as the Socratic Method. The five-week research study used the Socratic Method for developing critical thinking skills in English Language Learners. At the end of the five weeks, ELL's developed critical thinking skills, therefore proving that the Socratic Method is an effective strategy for developing critical thinking skills in English Language Learners.

Introduction

There have been many changes and trends in education. Critical thinking skills continue to show importance in the literature. This study discusses critical thinking skills specifically highlighting literature on a teaching and assessment strategy linked to developing these skills. Additionally, this study explores the effectiveness of the teaching and assessment strategy in developing critical thinking skills in middle school English Language Learners.

Purpose of the Study

Critical thinking skills have been discussed in the United States education system for many years now. With this topic so familiar to teachers, administrators, and parents, there have been many ideas of what critical thinking skills are, and the definition of critical thinking skills has become broad and confusing. There have been many teaching and assessment strategies that claim to develop and measure the amount of development of critical thinking skills, yet there is little research defining effective strategies. This study was designed to specifically define critical thinking skills, and determined the value of one teaching and assessment method in developing critical thinking skills with English Language Learners.

Importance of the Study

The first goal of the study was to clearly define and examine what the specific critical thinking skills are, according to the literature that has been researched and published. In doing so, the definition of critical thinking skills is concrete. Educators are able to work with critical thinking skills in a more appropriate and focused matter.

Through analyzing and researching one specific teaching method, definitive evidence supports whether or not this method develops critical thinking skills in students. Another

important facet of this study is to provide educators with effective teaching and assessment strategies to develop critical thinking skills in their students. Educators can use information gathered this study in their classroom.

Definition of Terms

Assessment Strategy. An assessment strategy is a tool used before, during, and after instruction that checks for understanding in the students about prior, current, and potential for new knowledge (O'Malley & Valdez, 1996).

Critical Thinking Skills. Critical thinking skills refer to specific higher level thinking skills as compiled and described by Peter Facione (Facione, 1990).

English as a Second Language. English as a Second Language (ESL) refers to the educational program for students learning English as a second or subsequent language (O'Malley & Valdez, 1996).

English Language Learners. English Language Learners (ELL) are students in the United States education system with a first language that is not English. These students are learning English as an additional language (US Department of Education, 2014).

Socratic Method. The Socratic Method is a tool used in classroom instruction and evaluation based on questions and discussions lead by the leaners (Peter & Elder 2008).

Teaching Strategy. Teaching strategy refers to a tool used during instruction that enhances the content and thinking of the students (Eschevarria, Vogt, & Short, 2012).

Literature Review

Critical Thinking Skills

History. The literature on critical thinking skills dates back to the 1960's and continues through to the present. The world of education did not fully grasp or come to a unified understanding of what critical thinking skills were until the 1990's. A researcher named Peter A. Facione conducted qualitative research for the sole purpose of coming to a consensus across the board to what critical thinking skills are and how they should be instructed and assessed in the classroom (Facione, 1990). In this qualitative study, Facione gathered forty-six scholars, educators, and researchers of critical thinking theory and assessment. The panel of experts met multiple times to discuss critical thinking skills and their definitions. Facione then recorded the consensus of critical thinking skills, and has since been a leader of critical thinking skills research and publication.

Critical thinking could simply be stated as good thinking or correct thinking. In other words, thinking that is not illogical (Facione, 2011). Facione describes it as, "judging in a reflective way what to do or what to believe… Critical thinking is judgment, reflective, and purposive" (Facione, 2000, p.61-62).

Critical thinking skills can be broken into six specific characteristics or skills. These characteristics are interpretation, analysis, evaluation, inference, explanation, and self-regulation (self-evaluation). Even though there are six main specific skills, all are rooted in the understanding of how people look at a question and reason with it, as well as the idea of how people receive an answer to a problem or question (Facione 1990).

M. Neil Browne and Stuart Keeley (2001) compare critical thinking to the act of panning for gold. When a person pans for gold, first they grab the big batch of material. Then the person sorts through all the material to find the precious gold. The same can be said of critical thinkers. These people take all the information that is given to them, and sort through it looking for

answers to all of the "why" questions and for the importance and meaning that can be taken from it (Browne & Keeley, 2001).

Interpretation. Interpretation is described as taking the information given, comprehending all of its meaning, then clearly reproducing the information or its meaning. (Ignatavicius, 2001). This skill is probably used in many classrooms already. Teachers often give students content and instruction on a regular basis, with the expectation of producing a piece of work that uses the content. The reproduction of the instruction could commonly be called as homework or research projects.

Analysis. Analysis is a skill in which a person looks at the inferential relationships in the information given, and makes judgments about the topic being expressed (Facione, 2011). Analysis is also used to connect questions, statements, and ideas together. When the skill is being used, the student is taking the information given, joining each statement with the previous to grasp the overall concept or meaning being expressed.

Evaluation. Evaluation reflects the skill of finding relevance or determining the credibility of something or someone (Ignatavicius, 2001). An activity that challenges a student to determine if a statement is credible requires students to use the skill of evaluation. It is when a student specifically has to make a judgment on the value of the information and then prioritize it according to what is needed at a certain time.

Inference. Drawing conclusions, predicting, and making new ideas from information are all examples of inference (Ignatavicius, 2001). A practical example of this skill reflects students watching a movie, and trying to figure out what will happen in the end. Inferring information is also described as identifying implicit information, in other words, understanding ideas and

information that is not directly stated. Inference is closely related to deductive reasoning, because the conclusions made by the student are not directly stated in the information given.

Explanation. Clearly stating the reasoning behind a decision or an answer reflects the use of the critical thinking skill explanation (Facione, 2011). Explanation exhibits a thorough understanding of the background ideas, causes or reasons for a particular event, idea, or action. A student that can clearly justify an answer to a question or describe the process of how the student reached an answer is a specific demonstration of this skill.

Self-Regulation. Self-regulation is the monitoring or evaluating of oneself cognitively (Ignatavicius, 2001). Editing papers, reworking a problem, and rethinking a strategy are all examples of self-regulating activities. It is the skill of knowing and conceptualizing one's own pace of learning and understanding. When the skill is used correctly, students become independent and responsible for their own education.

Importance of Critical Thinking Skills

Critical thinking skills are important to ensure students achieve success inside and outside the classroom. Students are not only working with concepts and ideas, but also manipulating the concepts, and trying to see how well the concepts can be understood. By working with concepts and being "hands on" with them, students are grasping it all more deeply. According to Dr. Binta Colley, Dr. Andrea Bilics, and Dr. Carol Lerch, "the ability to think critically is an important trait for all members of society. With today's multinational, multicultural, and complex issues, citizens must be able to sift through large amounts of data to make intelligent decisions." (Colley, Bilics, & Lerch, 2012). These professors also quoted a researcher named Leibowitz saying, "complex thinking, communication and collaboration will be among the essential process areas for the world as we will know it" (Colley et al., 2012; Leibowitz 1997).

A second reason for the need to develop critical thinking skills is that many employers are looking for candidates who exhibit critical thinking skills. “Eighty-one percent of the employers surveyed requested more critical thinking instruction for their current and prospective workforce. This call for a change in the way students are educated has been heard around the world,” (Butler, 2012). There are more than classroom reasons for students to exhibit critical thinking skills. Employers are looking for candidates and potential new-hires to show these skills as well.

Teaching and Assessment of Critical Thinking Skills

There is a wide variety of theories found in the literature on how to teach and assess critical thinking skills. The most prominent studies use the Socratic Questioning along with other teaching for strategies critical thinking skill development (Paul & Elder, 2007; Paul & Elder 2008). Similarly, Socratic Seminars in conjunction with other strategies has been researched and recommended for assessing and fostering critical thinking skills development (Kenney, 2013). What needs exploration is using Socratic Questioning as a teaching method and the Socratic Seminars to assess the acquisition or improvement of critical thinking skills. It is important to determine the effectiveness of these strategies.

Socratic Questioning. Socratic Questioning involves using questions to review one’s thinking overall. The questions are designed to look at the quality of an answer that is given. This type of questioning should be used to see the precision, accuracy, depth, clarity, relevance, and breadth of the reasoning made by the student (Paul & Elder, 2007). There are three types of questions used in Socratic Questioning: spontaneous, exploratory, and focused (Paul and Elder, 2008).

Spontaneous. This type of Socratic Questioning can also be thought of as unplanned. A teacher asking questions to provoke deeper knowledge about the concept or idea being taught that were not planned demonstrates this (Paul & Elder, 2008). These types of questions are not developed ahead of time by the teacher, but rather are questions that emerge during instruction to explore the deeper meaning of an answer given by a student or an objective discussed during instruction.

Exploratory. This type of questioning involves activating prior knowledge and previous connections (Paul & Elder, 2008). The purpose is to explore the learner's mind to find what he/she may already know about the concept. This type of questioning is to be planned ahead by the teacher. In all areas of instruction, activating prior knowledge is essential during instruction. Exploratory questions allow teachers to ask specific questions to determine relationships students have formed between content objectives and concepts.

Focused. This type of questioning is one that looks specifically at a concept or topic and investigates it (Paul & Elder, 2008). Focused questions are planned ahead by the teacher, and challenge students to think about the concept at a higher level. The point of focused questions are not to just have students understand what the concept is, but to use, explore, and manipulate the concept.

Socratic Seminars. Socratic seminars are a type of assessment also known as Socratic Circles. This is, in one way, a dialogue or discussion between students about the concept at hand (Kenney, 2013). Depending on the size of the class, this can be done with two groups of students. Using two groups, a small circle of students would group inside a larger circle of students, which represents the second group. The teacher would pose the initial topic and questions and each circle of students would dialogue about the topic. As each group takes a turn

discussing, students focus on their own ideas, and then respond to the talking points of the other group.

It is important that students are first previously knowledgeable about the content that will be discussed in the Socratic Circles. The teacher then presents the first question. Students in the smaller group discuss the questions and form new questions. Then the larger group discusses the topic and questions from the smaller group and creates their own questions for the smaller group to answer. This process is repeated, creating a dialogue between the two groups. The teacher, after presenting the opening question, acts as the facilitator of the seminar (Kenney, 2013).

Holistic Critical Thinking Scoring Rubric. When administering an assessment activity for critical thinking, the scoring rubric that was created by Peter Facione (2014) for assessing critical thinking skills development is particularly valuable. This rubric clearly describes what should be observed and how to recognize important characteristics. Educators can easily use the rubric with little to no training. There are also clear instructions provided on how to score the rubric (Appendix A). The rubric clearly outlines how to evaluate - the use and development of the characteristics and specific skills associated with critical thinking skills (Facione & Facione, 1994).

Research On English Language Learners

The research related to English Language Leaners falls under one of several categories: language learning, vocabulary, and mainstreaming into the regular classroom. Research on critical thinking skills with ELL students, however, does not appear to have been previously done. The most prominent research on ELL students reflects language acquisition.

The demand for more research with the ELL student population is high due to the steady growing numbers of English Language Learners in U.S. schools. According to the National

Center for Educational Statistics (2014), from the 2002-03 to 2011-12 school years, all but 10 states grew in the number of ELL's in the public school system. The number of ELL's in 2002-03 was 4.1 million students, and grew to 4.4 million ELL's in 2011-12 (US Department of Education, 2014).

Critical thinking skills have not been a pronounced topic of research for ELL students. It is understandable that previous importance was given to researching language learning, vocabulary, and mainstreaming. However, the question of what is needed for ELL's after language and vocabulary is learned and the students have been mainstreamed into regular classrooms remains. Critical thinking is considered important for the success of native English speaking students. It is therefore important for critical thinking skills to be addressed for ELL students in order to increase their success inside and outside of the classroom.

In a research study on best practices for language development with ELL students by Hersh Waxman and Kips Tellez (2002), it was discovered that instructional conversations could have a dual purpose. These purposes are language acquisition and basic and critical thinking skills. The reasoning is that students have to be able to discuss concepts and meanings from the instruction, and justify their answers (Waxman & Tellez, 2002). Waxman and Tellez (2002) also suggest that any cognitive and metacognitive strategies can be successfully developed in ELL students by teaching with metacognitive strategies first and cognitive strategies second. This indicates the potential for developing critical thinking skills with ELL students and the need for effective strategies for teaching and assessing.

Value and Significance of Study

There is little information found on how to effectively teach critical thinking skills, and previous research does not specify what makes these skills improve or which skills students need

to improve (Norris, 2003). Additionally, there is a lack of research on critical thinking skills and English Language Learners. Therefore it is important to explore how to effectively teach and assess critical thinking skills, and to explore developing these skills in English language learners.

This research will serve as a model and guide for teachers and administrators on how to identify, teach, and assess critical thinking skills. This research will be accessible for teachers to duplicate or manipulate the research method to fit their own classrooms and be used to develop critical thinking skills in students, whether ELL students or not. Lastly, there is a goal for to start more research about critical thinking skills in ELL students.

Methodology

Research Question

This study focused on determining the effectiveness of the Socratic Method for developing critical thinking skills with English Language Learners. The study explored the following question: Is the Socratic Method an effective teaching and assessment strategy to develop critical thinking skills for ELLs?

Participants

This research explored the teaching and learning of critical thinking skills of seventh grade students at an urban city middle school in Nebraska. The school population at this of the research was 1260 students, with 188 students, 15% of the student population, identified as ELL's at all levels. The development of critical thinking skills in these students had been a need. Teacher and administration observations of the student body had highlighted a lack of critical thinking skills in the ELL students. Additionally, the district level of administrators expressed that a learning target for all students is developing more critical thinking skills. As previously

stated, the students were in seventh grade, and are taking language arts in the Dual-Language program. The only scores collected as data were those belonging to the English Language Learners in the classroom, and all names were kept anonymous.

At this middle school, if a student enrolls in the school as a Level 1 ELL student or newcomer, they are not in a regular language arts class, but rather an isolated ESL classroom. When the student reaches a Level 2 or 3 ELL, the student is placed into the Dual-Language Program. For the purpose of language arts, students receive instruction in English and Spanish in alternating weeks. The ELL status of the student is monitored by a standardized assessment given once a year. All other forms of standardized assessments are given in English and are taken with the English native students. The student stays in the Dual-Language Program until graduation from the school. The Dual-Language Program is made up of ELL students and individually accepted English native students who applied to be in the program.

There were two language arts teachers who participated in the study. These teachers have their own classroom, and have three years or more experience in teaching middle school language arts. The teachers received training one day a week for four weeks on how to implement the Socratic Questioning during instruction, and how to assess using the Socratic Seminars. Instruction on using the Holistic Rubric was given before the start of the study. The names of the teachers were not reported.

Environment

Each teacher was in his or her own classroom, and had a block schedule that allowed ninety minutes for language arts instruction. There were three classes that each teacher was responsible for throughout the school day. The classroom environment for all did not change throughout the research study. Each class had a range of seventeen to twenty-seven students,

with English Language Learners mixed in throughout. The content of what was being instructed was not changed, and followed the district curriculum guides.

Intervention

The language arts teachers used the content taught everyday in the classroom, and added Socratic Questioning a minimum of three times a week to the instruction. Teachers were first trained in recognizing critical thinking skills, the Socratic Method, Socratic Questioning (Appendix A) and Socratic Seminars (Appendix B), and the Holistic Rubric (Appendix C). The teachers did one practice round of Socratic Seminars with students without taking data, to make sure procedures and routines were understood and demonstrated by students. The teachers went through coaching in these areas one day a week for one hour, for a total of four hours over four weeks.

After training, teachers began on the first week, by not adding any Socratic questioning to the instruction. At the end of the week, a Socratic Seminar was conducted to assess the critical thinking skills that were developed. This created the baseline data.

The following four weeks, the language arts teachers implemented Socratic Questioning with their everyday lesson plans for three days a week. At the end of each of the four weeks, each class had a Socratic Seminar to assess the development of critical thinking skills. While the Socratic Seminar was conducted, the teachers recorded student progress on critical thinking skills by scoring each student using the Holistic Rubric. Due to each class being part of the Dual-Language Program, the language of instruction and assessment alternated by week. There were Socratic Questioning and Socratic Seminars conducted in both English and Spanish.

Data Collection

At the end of each week, the English Language Learners' scores from the Socratic Seminars were recorded and collected. The scores were provided anonymously by an identification number and charted and examined. The Socratic Seminars were video recorded to be reviewed and analyzed by the researcher for correct procedures and data collection, but anonymity of students remained intact.

After the four weeks of implementation of the Socratic Method in the classroom, the language arts teachers met to discuss the results of the data. The key findings and interpretations were recorded anecdotally for qualitative analysis. The student results and teacher discussion data were analyzed to determine the overall effectiveness of the teaching and assessment method.

Findings

The study was designed to specifically define critical thinking skills and to determine the value of one teaching and assessment method in developing critical thinking skills with English Language Learners. These results were obtained by using the Facione Holistic Rubric during Socratic Seminars by teachers in a seventh grade Dual Language classroom. To prepare students before the seminars, teachers used Socratic Questioning a minimum of three times a week in everyday instruction. The researcher via video recording reviewed all procedures, routines, and data collection done during this research.

Data Analysis

This study focused on determining the effectiveness of the Socratic Method for developing critical thinking skills with English Language Learners. The study explored the following question: Is the Socratic Method an effective teaching and assessment strategy to develop critical thinking skills for ELLs?

According to the Facione Holistic Scoring Rubric, scores with a lower number indicate little critical thinking skills were developed, and higher scores indicate the degree of development. The highest score a student can achieve on the rubric is a 4, and the lowest score a student can achieve is 0. The data was reported as the differences of the mean scores from the baseline. The effect size was calculated using the Cohen's d, which is based on the mean scores and the standard deviation as presented in Table 1.

Table 1

Degree of Change in Critical Thinking Skills

Week	n	Mean	SD	ES
1	13	1.38	1.003	baseline
2	13	1.69	1.136	0.29
3	11	1.82	0.833	0.48
4	12	1.83	1.344	0.38
5	11	2.27	1.483	0.70

There were 13 ELL participants in the study. In week one, all 13 students were present to participate. The baseline data shows that the critical thinking skills were low in these students. In week two, all 13 students were again present and the mean of the scores began to improve. Week three had two students absent and the effect size almost doubled. The standard deviation went down due to students' scores being relatively close. The fourth week had little growth in the means and one student absent. The effect size was low due to the little growth. Week five grew in all areas and only one student was absent. The effect size from week 1 to week 5 was 0.70.This indicated a large degree of change in critical thinking skills development. Therefore, the Socratic Method is an effective way to develop critical thinking skills in ELL's.

Qualitative data was collected from discussions with teachers after the research was completed. All agreed that the Socratic Method appears to be an effective way to develop critical thinking skills in ELL's. The teachers also stated students asked and answered questions more often in ways that indicated a deeper understanding and ability to manipulate the content, rather than restating the information.

The discussions also yielded additional qualitative findings. The teachers explained how the classroom environment and social aspect of the class greatly improved. There were formal and informal dialogues between ELL's and English native students. Also, students were described as having taken ownership of the information and discussions in the classroom. One teacher noted that two students who started out uncomfortable or quiet began to speak up during the Socratic Seminars. All of the teachers noticed that at times the English and Spanish language barriers seemed to cause ELL's hesitance in communicating ideas, though the ideas were still being formed and critical thinking skills were being developed. Additionally, all teachers noticed critical thinking skills being developed in English native students as well as in the ELL's.

Lastly, the qualitative data revealed a consensus that the Socratic Seminars demanded the time of an entire ninety-minute instruction block to assess students. However, the teachers found it easy to implement the Socratic Questioning strategy during instruction. Overall, the teachers gained an authentic and legitimate assessment of the critical thinking skills that were developed in students.

Conclusions and Recommendations

The data indicates significant growth over the five weeks of using the Socratic Method. Based on the findings, using this method over a longer period of time would likely produce greater growth in critical thinking skills. The results also indicated that the language challenges

of ELLs did not hinder the development of critical thinking. This is an important finding based on the body of research on effectively teaching ELL's beyond language acquisition. The recommendation is that teachers should use the Socratic Method in the classroom during instruction to develop critical thinking skills in ELLs.

The qualitative data supports the idea of using this method in classrooms consisting of ELL's and English native speaking students to support social skill and informal language learning. This learning environment would be based on discussions and student interactions, where both academic and social language can be acquisitioned. Therefore, using the Socratic Method, allows this social interactions to be beneficial for both the ELL's and English native students.

Limitations

There were some limitations in this study. The first limitation was the issue of student absences and the inability to administer a missed assessment. Due to the time consumption of the assessment, some individual scores were missing from the data. Another limitation of this study was the number of ELL's who were eligible to be included in this research at this particular site. While this study yielded some valuable results for teaching critical thinking skills to ELL's, the limited number of participants affects the ability to generalize these finding beyond a small classroom of ELL students. Though this study explored a small population of students, the findings were significant and should be studied on a greater scale. Additionally, this study suggests the need for a practical tool for using the Socratic Method in the classroom.

Reflection and Product

This research study enhances the literature on teaching ELL beyond language acquisition skills. Additionally, this study revealed additional areas in need of exploration. The study also is a guide for teachers to use in their classrooms for their students in developing critical thinking skills. The value of the Socratic Method is clear and warrants regular use and further study.

Discussion of Implications

Analysis of the data suggests the use of the Socratic Method is effective for developing critical thinking skills in English Language Learners. The data showed that students' scores improved throughout the five-week study, supporting the conclusion that critical thinking skills were developed. The hypothesis that the Socratic Method does create critical thinking skills was proven to be true.

Additionally, the qualitative data suggests that more research should be done on the social aspect of the Socratic Method use on the classroom environment. It is important to explore how the Socratic Method may improve the social skills in ELL's with English-native speakers and the entire social climate of the classroom. It is theorized from the evidence in this study that using the Socratic Method may improve instruction, instructional dialogue, and continued development of critical thinking skills for all students.

Plan of Action

The regular use of the Socratic Method requires professional development and resources. A handbook was created to explain to teachers how to use the Socratic Method and the Facione Holistic Scoring Rubric in the classroom. This handbook provides a guide to incorporate these strategies into the everyday instructional time in the classroom. Teachers can plan instructional activities and reflect upon the types of questioning used and how to add more types.

The handbook gives step-by-step instructions for using the assessment strategy and tool, which will guide teachers in evaluating the degree to which critical thinking skills are developed in their students. The Facione Holistic Scoring Rubric is included for measuring the assessment. The rubric has been adapted into student-friendly terms for students to clearly understand what is being measured and what is expected of them. The handbook is located in Appendix D.

Conclusion

Even though there have been many changes and trends in education, critical thinking skills continue to show importance in the literature. This study explores critical thinking skills specifically highlighting literature on a teaching and assessment strategy that developes these skills, called the Socratic Method. Additionally, the study discovers that the Socratic Method is effective in developing critical thinking skills in middle school English Language Learners.

This study defines critical thinking skills and its history, clarified the Socratic Method, clearly proves that the Socratic Method develops critical thinking skills in English Language Learners, and provides a handbook for the Socratic Method in the classroom. This research is significant to the field of English as a Second Language education because it investigates teaching ELL's beyond language acquisition through a new area of research.

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Appendix A

Socratic Questioning

- Spontaneous
    - Unplanned Questions
    - Purpose is to go beyond the basic understanding of the topic or concept
    - Gives teachers the freedom be flexible during instruction and to explore where students are wanting to use the concept or topic
- Exploratory
    - Planned Questions
    - Purpose is to probe for ideas and background knowledge about the topic or concept
    - Gives teachers a baseline for what students already know
- Focused
    - Planned Questions
    - Purpose is to create a dialogue with students that explores the topic or concept beyond basic understanding
    - Allows students to see the concept or topic in ways it can be manipulated, used, or connected to previous topics discussed during instruction

Paul, R., & Elder, L. (2008). Critical Thinking: The Art of Socratic Questioning, Part III. *Journal of Developmental Education , 31* (Spring).

Paul, R., & Elder, L. (2007). The Art of Socratic Questing, Part II. *Journal of Developmental Education , 31* (2).

Appendix B

Socratic Seminars

- 2 circles
    - 1 inner and 1 outer circle (the inner circle may be smaller than the outer circle)
    - The teacher chooses ahead of time who is in each circle
    - Circles represent the two groups that will have turns in the discussion
- Process
    - The teacher asks a prompt question
    - The inner circle responds and creates new questions and ideas
    - The outer circle then responds and creates new questions and ideas
- Time Limits
    - First round – 7 minutes
    - Second round – 5 minutes
    - Third round – 3 minutes
    - Final round – 1 minute

Kenney, J. (2013). Fostering critical thinking skills: strategies for use with intermediate gifted readers. *Illinois Reading Counsel , 41* (2).

Appendix C

Holistic Critical Thinking Scoring Rubric

Facione and Facione

4 Consistently does all or almost all of the following:

- Accurately interprets evidence, statements, graphics, questions, etc.
- Identifies the salient arguments (reasons and claims) pro and con.
- Thoughtfully analyzes and evaluates major alternative points of view.
- Draws warranted, judicious, non-fallacious conclusions.
- Justifies key results and procedures, explains assumptions and reasons.
- Fair-mindedly follows where evidence and reasons lead.

3 Does most or many of the following:

- Accurately interprets evidence, statements, graphics, questions, etc.
- Identifies relevant arguments (reasons and claims) pro and con.
- Offers analyses and evaluations of obvious alternative points of view.
- Draws warranted, non-fallacious conclusions.
- Justifies some results or procedures, explains reasons.
- Fair-mindedly follows where evidence and reasons lead.

2 Does most or many of the following:

- Misinterprets evidence, statements, graphics, questions, etc.
- Fails to identify strong, relevant counter-arguments.
- Ignores or superficially evaluates obvious alternative points of view.
- Draws unwarranted or fallacious conclusions.
- Justifies few results or procedures, seldom explains reasons.
- Regardless of the evidence or reasons, maintains or defends views based on self-interest or preconceptions.

1 Consistently does all or almost all of the following:

- Offers biased interpretations of evidence, statements, graphics, questions, information, or the points of view of others.
- Fails to identify or hastily dismisses strong, relevant counter-arguments.
- Ignores or superficially evaluates obvious alternative points of view.
- Argues using fallacious or irrelevant reasons, and unwarranted claims.
- Does not justify results or procedures, nor explain reasons.
- Regardless of the evidence or reasons, maintains or defends views based on self-interest or preconceptions.
- Exhibits close-mindedness or hostility to reason.

Facione, P., & Faccione, N. (1994). Holistic Critical Thinking Scoring Rubric. Milbrae, CA: The California Academic Press.

Appendix D

A Guide to the Socratic Method for Developing Critical Thinking Skills in ELL's

By Roger D. Jensen Jr.

What are Critical Thinking Skills?

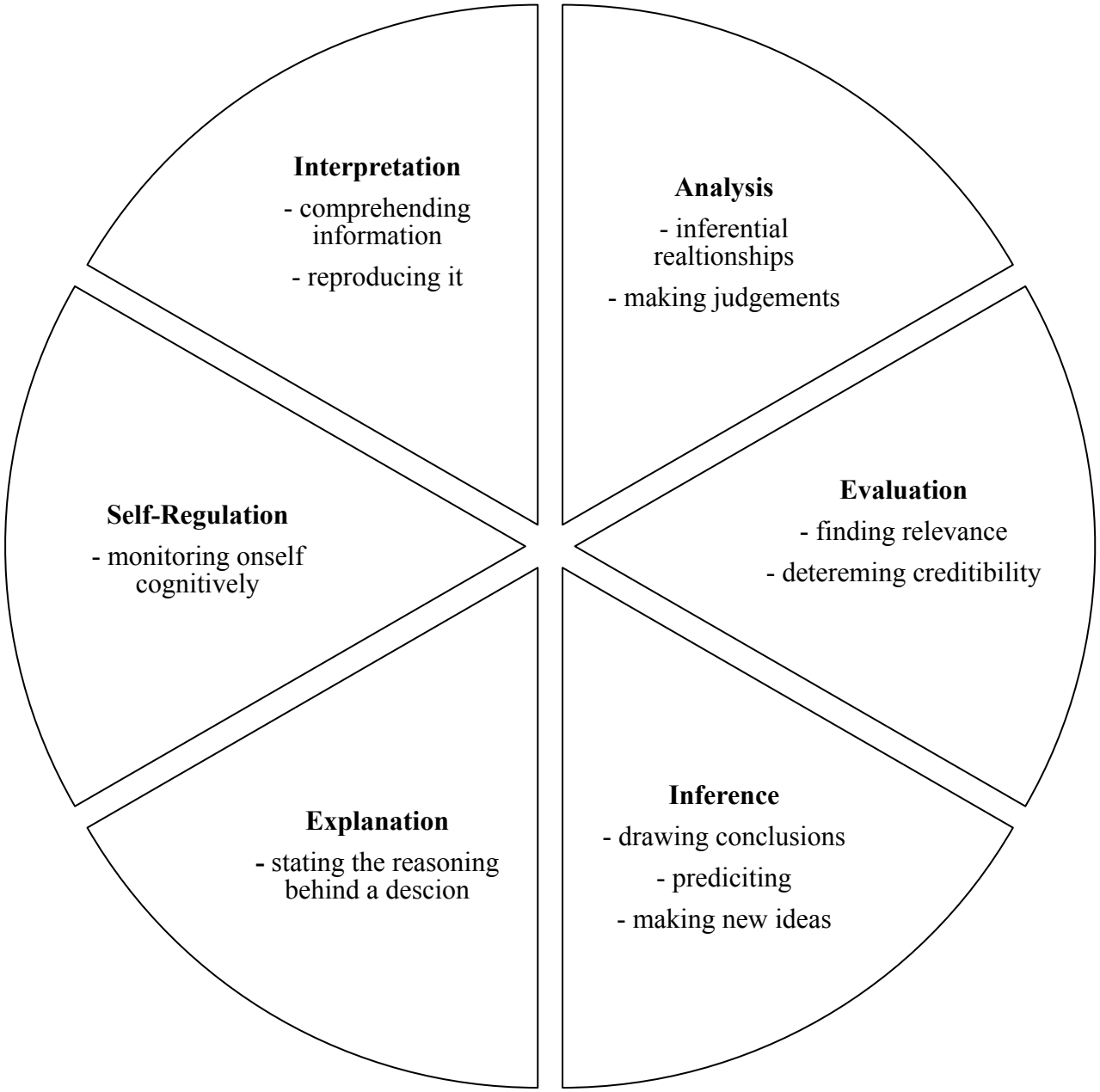
Critical thinking could simply be stated as good thinking or correct thinking. In other words, thinking that is not illogical (Facione, 2011). Facione describes it as, "judging in a reflective way what to do or what to believe… Critical thinking is judgment, reflective, and purposive" (Facione, 2000, p.61-62).

A researcher named Peter A. Facione conducted qualitative research for the sole purpose of coming to a consensus across the board to what critical thinking skills are and how they should be instructed and assessed in the classroom (Facione, 1990). In this qualitative study, Facione gathered forty-six scholars, educations, and researchers of critical thinking theory and assessment. The panel of experts met multiple times to discuss critical thinking skills and their definitions. Facione then recorded the consensus of critical thinking skills, and has since been a leader of critical thinking skills research and publication.

Critical thinking skills can be broken into six specific characteristics or skills. These characteristics are interpretation, analysis, evaluation, inference, explanation, and self-regulation (self-evaluation). Even though there are six main specific skills, all are rooted in the understanding of how people look at a question and reason with it, as well as the idea of how people receive an answer to a problem or question (Facione 1990).

M. Neil Browne and Stuart Keeley (2001) compare critical thinking to the act of panning for gold. When a person pans for gold, first they grab the big batch of material. Then the person sorts through all the material to find the precious gold. The same can be said of critical thinkers. These people take all the information that is given to them, and sort through it looking for answers to all of the "why" questions and for the importance and meaning that can be taken from it (Browne & Keeley, 2001).

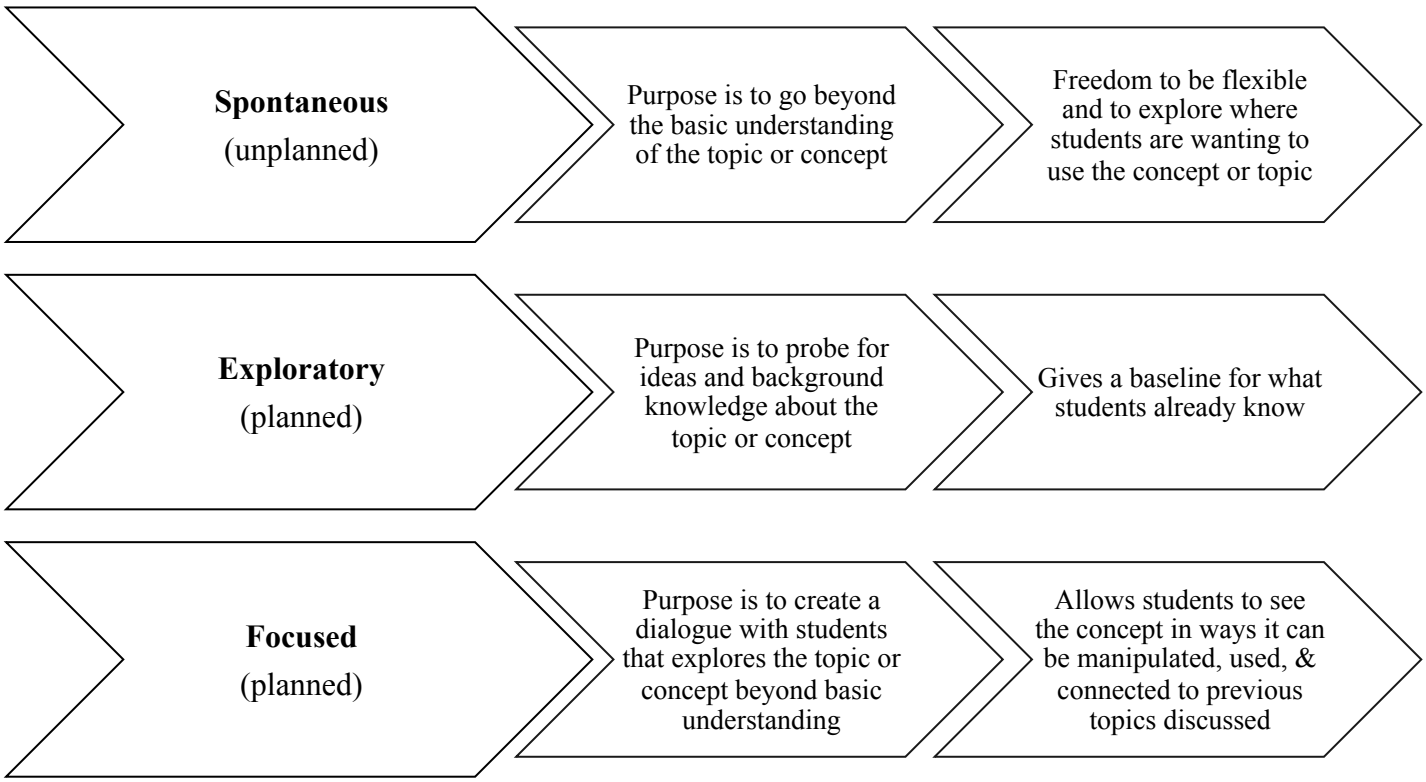
The 6 Critical Thinking Skills



The Socratic Method

The Socratic Method is made up of a teaching and assessment strategy. When both are used together, critical thinking skills are developed. To do so, there needs to be time to fully implement each on and give the method an authentic effort, to have authentic results.

Socratic Questioning. Socratic Questioning involves using questions to review one's thinking overall. The questions are designed to look at the quality of an answer that is given. This type of questioning should be used to see the precision, accuracy, depth, clarity, relevance, and breadth of the reasoning made by the student (Paul & Elder, 2007). There are three types of questions used in Socratic Questioning: spontaneous, exploratory, and focused (Paul and Elder, 2008).



Socratic Seminars. Socratic seminars are a type of assessment also known as Socratic Circles. This is, in one way, a dialogue or discussion between students about the concept at hand (Kenney, 2013). Depending on the size of the class, this can be done with two groups of students. Using two groups, a small circle of students would group inside a larger circle of students, which represents the second group. The teacher would pose the initial topic and questions and each circle of students would dialogue about the topic. As each group takes a turn discussing, students focus on their own ideas, and then respond to the talking points of the other group.

It is important that students are first previously knowledgeable about the content that will be discussed in the Socratic Circles. The teacher then presents the first question. Students in the smaller group discuss the questions and form new questions. Then the larger group discusses the topic and questions from the smaller group and creates their own questions for the smaller group to answer. This process is repeated, creating a dialogue between the two groups. The teacher, after presenting the opening question, acts as the facilitator of the seminar (Kenney, 2013). Below is a student version of a handout that may used in class. This handout may provide more detail and clarification.

Socratic Seminars

- What are they?
  - A way to discuss information
  - Allow a deeper understanding of the topics in class in a fair and equal dialogue.
- How do they work?
  - The class is split into two different groups
  - The teacher asks a question a head of time, and the two groups take turns discussing it.
- How to get started.
  - You will need:
    - 2 pieces of paper and a writing utensil
    - Resource for where the question comes from
  - 1st piece of paper
    - Tear it up into 5 pieces
    - These pieces become your talking chips
  - 2nd piece of paper
    - This is for note taking
    - One side for first set of thoughts and ideas, and for responses to ideas
- The 2 groups…
  - One group will create an inner circle
    - This group discusses firsts and takes notes second
  - One will create an outer circle
    - This group takes notes first and discusses second
  - Each group gets 4 rounds to discuss and note-take
    - First round – 7 minutes (all 5 chips)
    - Second round – 5 minutes (3 chips)
    - Third round – 3 minutes (2 chips)
    - Final round – 1 minute (1 chip)
- Assessing
  - Assess by the content of what is being discussed, and explain answers and respond to each others'
  - Make sure all students are using the number of talking chips for each round
    - NO more and NO less
  - Make sure the groups stay on topic
  - Outer needs to be make sure to take notes, so they can respond to inner circle's ideas when it is their turn
  - Score using Facione Holistic Rubric.
    - 0 is given for not participation and development of critical thinking skills
    - 4 is given for advanced development of critical thinking skills
- Example Question and Starter
  - This example can be used to get the teacher and students use to the process
  - Give students and example question, and allow 3-5 minutes for students to write thoughts on the first side of the paper.

Holistic Critical Thinking Scoring Rubric

Facione and Facione

4 Consistently does all or almost all of the following:

- Accurately interprets evidence, statements, graphics, questions, etc.
- Identifies the salient arguments (reasons and claims) pro and con.
- Thoughtfully analyzes and evaluates major alternative points of view.
- Draws warranted, judicious, non-fallacious conclusions.
- Justifies key results and procedures, explains assumptions and reasons.
- Fair-mindedly follows where evidence and reasons lead.

3 Does most or many of the following:

- Accurately interprets evidence, statements, graphics, questions, etc.
- Identifies relevant arguments (reasons and claims) pro and con.
- Offers analyses and evaluations of obvious alternative points of view.
- Draws warranted, non-fallacious conclusions.
- Justifies some results or procedures, explains reasons.
- Fair-mindedly follows where evidence and reasons lead.

2 Does most or many of the following:

- Misinterprets evidence, statements, graphics, questions, etc.
- Fails to identify strong, relevant counter-arguments.
- Ignores or superficially evaluates obvious alternative points of view.
- Draws unwarranted or fallacious conclusions.
- Justifies few results or procedures, seldom explains reasons.
- Regardless of the evidence or reasons, maintains or defends views based on self-interest or preconceptions.

1 Consistently does all or almost all of the following:

- Offers biased interpretations of evidence, statements, graphics, questions, information, or the points of view of others.
- Fails to identify or hastily dismisses strong, relevant counter-arguments.
- Ignores or superficially evaluates obvious alternative points of view.
- Argues using fallacious or irrelevant reasons, and unwarranted claims.
- Does not justify results or procedures, nor explain reasons.
- Regardless of the evidence or reasons, maintains or defends views based on self-interest or preconceptions.
- Exhibits close-mindedness or hostility to reason.

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