Integrating Information Literacy into Elementary Social Studies in Taiwan

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Abstract

In an information age, schools should integrate information literacy into school curricula and educate children to be information literate. The purpose of this study was to develop and evaluate an integrated information literacy curriculum in social studies for elementary level. The collaborative action research was used in this study. The researcher and a fifth-grade teacher collaboratively planned an integrated information literacy curriculum based on the Big6 approach. The methods of interview, observation, document analysis, panel discussion, and surveys were used for collecting data. The results showed that the information literacy could be integrated into related content areas, so that they both could be beneficial. However, it should be well planned in advance, in order to avoid the problems occurred in the process of integration.

Introduction

The overwhelming flood of information bombards us in an information age. A citizen of the 21st century will encounter a continuous stream of news and information broadcasts, as well as the two-billion homepages and one-half-million images available through the World Wide Web (Kranich, 2000). However, more information will not create a more informed citizenry automatically unless people know how to use information efficiently, effectively and creatively. These digital illiterates usually do not know how to access suitable information competently, neither can they evaluate information critically, or distinguish the differences among various formats of information. The end result of this trend is that people in the information age cannot solve problems or make informed decisions in their real lives. Thus, many researchers suggest that schools should integrate information literacy into the context of classroom curriculum, and educate children to be information literates, who can recognize, locate, evaluate, use and create effectively the needed information (AASL & AECT, 1998; Breivik & Senn, 1998; Johnson, 1999; Todd, 1996; Chen, 2001; Bruce, 1997; Pappas & Tepe, 2002).

The social studies are the study of political, economic, cultural, and environmental aspects of societies in the past, present, and future (Barr, Barth, & Shermis, 1977; Czarra, Collins, & Smith, 1998). For elementary school children, social studies have several purposes. One of the purposes, which is congruent to the concept of information literacy, is that the social studies provide students with the skills for productive problem solving and decision making, as well as for assessing issues and making thoughtful value judgments (NCSS, 1989; Woolever & Scott, 1988). Furthermore, the National Council for Social Studies (NSCC) has been in the process of revising their standards for years and finally published a report called *Curriculum Standards for the Social Studies* (NCSS, 1994), which emphasized that all students need practice in information literacy skills. However, researchers warned that the process of information literacy required not only the learning of a constellation of *skills*, but also a new way of *thinking* in order to derive meaning from learning (Carey, 1997;
Are there any strategies or models suitable for teaching a new way of thinking in social studies? The Big6 approach is one of the possible strategies, which is a process model of information problem-solving that encompasses six unlocked stages. Despite several studies recommended this approach was appropriate for the integration of information literacy, little empirical research results have been verified yet (Eisenber & Berkowitz, 1999, 1996; Edlund, 2001). In addition, this type of integrated information literacy curriculum has never been investigated thoroughly in Taiwan. Therefore, more research should be conducted to explore how to effectively integrate information literacy into social studies. Is the Big6 approach a good choice for the integration process? Are there any things need to be aware? And finally, what kinds of changes do school curricula have to make in order to put the integration of information literacy into practice?

Research Questions

The purpose of this study was to develop and evaluate an integrated information literacy curriculum in social studies for elementary level. Specific purposes related to the problems were as follows:

1. To develop an integrated information literacy curriculum in social studies.
2. To investigate elementary children’s performance in the integrated information literacy curriculum in the social studies.
3. To examine problems occurring in the process of integration in elementary school curricula.

Methods

Research Design

The collaborative action research was used as a framework in this study. The researcher and a fifth-grade elementary teacher (Ms. Chang) collaboratively planned an integrated information literacy curriculum and evaluated its effectiveness. This integrated curriculum was designed based on the Big6 approach. In other words, the set of six distinct stages that comprised the Big6 problem-solving method was highlighted. They were task definition (TD), information seeking strategies (ISS), location and access (L&A), use of information (UI), synthesis (S), and evaluation (E) (Eisenberg & Berkowitz, 1999). Within the study, the researcher and the teacher continuously kept on a dialogue and reflected on the process of the research.

Research Site

The research was conducted at Sun Elementary School (a pseudonym), which was in the urban southern part of Taiwan. The total of students in this school was about 1,700. This school had two computer labs which both could connect to the internet, and a library media center which owned about 8000 print and nonprint materials.

The research site was a fifth-grade classroom. There were thirty eight students in the class. Within the students there were great differences in academic achievements and learning attitudes. As Ms. Chang, the collaborative teacher noted, “Their differences are so big…some are totally behind. Since they are just grouped into a class, so they are always disputing and arguing.” (int Chang, 11/23) Nearly all students were
also busy with other after-school activities, e.g., mathematics, English, arts, etc.

Ms. Chang has been an elementary teacher for eighteen years. Her personality was warm but assertive. She loved to utilize various learning resources to help children carry out different projects.

Research Process


First of all, the researcher collected a variety of resources about information literacy, Big6, and social studies, so that the direction of this research would be more comprehensible. Then the researcher searched for a collaborative teacher in the near area. As a result, Mr. Chang showed that she was interested in this research because she encountered some problems last semester when she taught social studies in a framework of inquiry learning (rft, 4/20).


Since there would be a mayoral election in December, after several discussions, the researcher and Ms. Chang selected the unit of Government and People in the textbook as the social studies theme for integration of information literacy. This action project, called “Electing a Good Mayor”, provided students with a real social context, so that they could transfer the abstract concept into their real lives. The project was designed based on the Big6 for student exploration (Eisenberg & Berkowitz, 1999). First of all, students were organized into six groups, then started to define the tasks involved in the project, then decided the best seeking strategies and located various types of information, e.g., books, internet, newspaper, or human resources. After getting all of the needed information, they read, viewed and heard different types of information. Next, the students synthesized the main concepts of the theme and presented their projects in suitable types of media. Finally, the teacher asked students to do a self- and peer-evaluation of the effectiveness and efficiency in all stages they have experienced. Within this action project, the different types of literacy like library, visuals, media, computer, and network were all emphasized and intertwined in the social studies theme. Periodically throughout these stages, Ms. Chang and the researcher met with each group students to check on their progress.

Data Collection

Research data collected included participant observations (vid), researcher’s field notes (rft), interviews (int), questionnaire (que), student notebooks (sn), and student written reports (sp). All the interviews were recorded and transcribed, and the observations were videotaped and transcribed too. These different types of data were chosen to best illustrate perception as well as to triangulate results for more credibility.

Data Analysis

All of the data were organized and coded based on the types of data and date. For example, rft 4/20 meant the researcher’s field notes written on April 20. Then, these materials were read and analyzed continually by the researcher, so that salient categories could be identified. These categories thus represented different perspectives drawn from the whole data set.
Results
The Integrated Information Literacy in Social Studies Curriculum

For the elementary level, there are three units in the social studies textbook each semester and each unit has to be completed averagely in thirteen periods. However, since the new curriculum put into practice in Taiwan last year, the instructional time was reduced. Thus, short of teaching time was always Ms. Chang’s concern, “Now our classes are in a tight time frame. We don’t have time to do any remedial instruction. Math, language art…are all behind schedule...” (int Chang, 10/30). For integrating information literacy into the curriculum in a limited time, more abstract and confusing concepts in this unit were discussed in the class, while fact-based knowledge was assigned to students for self-reading. The teaching strategies employed often were group discussion, group presentation and concept mapping.

According to Ms. Chang’s observation, these fifth graders were not familiar with information skills such as library classification, use of encyclopedia, newspaper reading, as well as interviewing skills (int Chang, 10/10). Therefore, these topics were the main focuses in the information literacy of this integrated curriculum. Due to the space constraint, following table was the concise version of the integrated curriculum design (see Table 1):

Table 1: The Integrated Information Literacy in Social Studies Curriculum (concise version)

<table>
<thead>
<tr>
<th>Learning Objectives of Social Studies</th>
<th>Learning Objectives of Information Literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Understand the process of government formation</td>
<td>2.1 Take notes</td>
</tr>
<tr>
<td>1.2 Understand the functions of government</td>
<td>2.2 Understand library classification system</td>
</tr>
<tr>
<td>1.3 Identify the organization of local government</td>
<td>2.3 Utilize various types of encyclopedia</td>
</tr>
<tr>
<td>1.4 Identify the levels of local government</td>
<td>2.4 Read newspaper</td>
</tr>
<tr>
<td>1.5 Understand the ways of officials creation</td>
<td>2.5 Define the task of the inquiry project</td>
</tr>
<tr>
<td>1.6 Comprehend the meaning of election</td>
<td>2.6 Attain information seeking strategies</td>
</tr>
<tr>
<td>1.7 Solve social issues through a democratic process</td>
<td>2.7 Find needed information</td>
</tr>
<tr>
<td>2.8 Use information</td>
<td>2.9 Organize and present information</td>
</tr>
<tr>
<td>2.10 Evaluate the results and process</td>
<td></td>
</tr>
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</table>

# Objectives | Big6 Stages | Instructional Contents (in classes) | Student Learning Activities (after classes)
---|---|---|---
4 | 1.1 L&A UI | ● Teacher taught how to take notes and students took notes during the class.* | ● Students answered the previewed questions using different information sources.
2.1 | | ● Teacher gave previewed questions. | ● Students completed the library activity sheet.
2.2 | | ● Students role-played the process of government formation and discussed it. | |
2.3 | | ● Teacher explained the library classification system and the index of encyclopedia. | |
<table>
<thead>
<tr>
<th>Week</th>
<th>Section</th>
<th>Activity</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 3    | 1.2     | L&A UI   | • Teacher taught how to read newspaper.  
               • Teacher and students discussed government’s functions.  
               • Teacher explained the organization of local government.  
               • Teacher gave previewed questions.  
               • Students answered the previewed questions using different information sources.  
               • Students completed the newspaper activity sheet. |
| 4    | 1.4     | TD L&A UI | • Teacher explained the levels of local government.  
               • Teacher explained the ways of official creation.  
               • Teacher explained the Big6 process and gave the project.  
               • Teacher taught how to organize information.  
               • Students in groups discussed traits of a good mayor.  
               • Teacher and students discussed a candidate’s concept map.  
               • Teacher gave previewed questions.  
               • Students answered the previewed questions using different information sources.  
               • Each group completed the concept map.  
               • Students collected various sources of information about the selected mayoral candidates. |
| 2    | 1.6     | TD ISS L&A UI | • Teacher reviewed how to read newspapers.  
               • Each group presented the candidate’s concept map.  
               • Teacher and students discussed information seeking strategies.  
               • Each group discussed possible information seeking strategies based on the concept map. |
| 6    | 1.6     | ISS L&A UI | • Teacher taught how to conduct an interview with a candidate.  
               • Each group interviewed the selected candidates.  
               • Each group brainstormed a list of questions for interview.  
               • Each group listened to the recorded interview tape and classified the content based on the concept map.  
               • Each group collected various sources of information about the selected mayoral candidates. |
| 6    | 1.7     | ISS L&A UI | • Teacher clarified the contents of a written report.  
               • Each group designed a poster in the art class.  
               • Each group presented its projects with  
               • Each group synthesized all needed information.  
               • Peer evaluated other group’s written reports. |
Peer evaluated other group’s presentations.

Teacher arranged a mock election activity.

Students cast their votes.

Teacher and students examined problems occurred during the activity.

Students reflected on the results and process of their work.

Each group presented their reflections.

Teacher debriefed with the class about the whole project.

Students answered questionnaire.

# meant numbers of classes. Each class lasted 40 minutes in Taiwan. * Students took notes in each class.

Student’s Performance in the Integrated Curriculum

On the whole, there were thirty-four fifth graders from thirty-eight stated in the questionnaire they liked this integrated curriculum. Some of their reasons were collected as the following: “I don’t need to dully memorize all the contents in a textbook” (que 25); “I felt I can learn things in the textbook with this teaching strategy. Meanwhile, I can learn many new things beyond a textbook.” (que 8); “I don’t have to just recite so many things. This teaching method let me experience the real situation and understand it truly.’ (que 7)

As for the reasons for disliking this curriculum, the four students stated that: “I become anxious when I can’t find any needed information. I am afraid I will be detained in the school.” (que 18); “…because it is too much trouble, and I don’t know how to present my work.” (que 20) “We can’t cooperate well.” (que 38); “I don’t know how to arrange the found materials. They make me confused…” (que 28)

As the comments above illustrated, most of the children had positive reactions to the integrated information literacy curriculum, while the students who felt negative to it were mostly lack of information skills. In fact, this was the focus of the integrated information literacy curriculum. The following were the analyses of student’s performance of the integrated curriculum in social studies and information literacy. Due to the limitation of the paper length, only four more important learning objectives were selected for detailed exposition.

● In the Area of Social Studies

1. Comprehend the Meaning of Election

The researcher led students in groups to discuss traits of a good mayor with the concept mapping strategy. The group four selected character, work experience, and education as the most important traits of a mayor in its presentation. They asserted: “…He needs to serve on the city council or has some experiences like those before he can be a good mayor. Such experience can make him be more responsive to the citizens…” (vid 4, 11/12)

However, the issue of the government official experience became a dispute among students. One student noted, “I disagree with that. Serving on the city council doesn’t mean he will provide good service. He may
get our money, and get nothing done.” The group four argued, “Nobody will vote a person who accepts bribes. The newspaper will tell it.” Another student delightedly concluded, “You see, being an official is not a necessity for being a mayor. His service records are the main issue.” (vid, 11/12)

Afterward, with the company of Ms. Chang and parents, students in groups interviewed the mayor candidates, as another source to help students make unbiased judgment. Through the series of discussion, information collection and analysis, interview, as well as a simulated voting activity, the fifth graders’ progress in understanding the true meaning of election was shown in their notebooks: “Every citizen has the right to vote. We should appreciate it.” (sn25); ”We can’t elect him only because he is our friend. We have to know his background and policy.” (sn 14)

2. Solve Social Issues Through a Democratic Process

The unit of Government & People emphasized solving social issues through a democratic discussion. Thus, respecting the ideas of others was an important learning objective in this unit. However, fifth-grade students did not perform well in it within the whole process. The problems could be shown in the interviews with three group leaders:

“When one has an idea, another says it’s not good. But he won’t say his idea. So we have to change idea from one to one; finally we have a squabble and run out of time.” (int 1er, 12/21)

“If we have 8 minutes for discussion, there are 7.5 minutes in a quarrel. Everyone has his own opinion, and don’t want to listen to others. I was beaten by my group members.” (int 4er, 12/21)

“One guy wants this piece of material, and the other wants it too. So they start to fight for it and it is pulled apart. Then we lost our piece of information again.” (int 2er, 12/21)

The problems of working on teams and lack of democratic literacy were also illustrated in students’ questionnaire, twenty-two from thirty-eight students felt teamwork was their most serious problem during the whole project. In other words, despite working on teams for a month, students still could not respect other’s ideas. In the last reflection activity of this project, many students felt sorry about the tense relationship with others. Ms. Chang thus promised to give them more chances to improve their democratic attitudes. (vid, 12/17)

● In the Area of Information Literacy

1. Attain Information Seeking Strategies

Interview is one of the strategies for collecting candidate information. Ms. Chang facilitated students in groups to prepare higher-level interview questions and arranged the opportunity to practice them. As the following responses in the questionnaire illustrated, students felt it was the most valuable skill they have learned, “It boosts up my courage. I get some information not listed in the candidate’ flyers. It’s unforgettable experience.” (que 31); “I noticed there were many volunteers helping out. It means a candidate can’t win his election without other’s help.” (que 36)

On the other hand, during the interviews some students said they had difficulty in using tape recorders and taking notes, “…I am so nervous that I stammer a lot. I forget taking notes. The candidate doesn’t answer my question in detail, but I don’t know how to ask him more questions.” (int 3, 11/23); “Although I interviewed our teacher before, this time is different. It is a mayor candidate now. I forget recording…” (int
4, 11/23); “Ms. Chang should let us practice more interviewing tasks, e.g., making an appointment, so we won’t be afraid…” (int 25, 11/23)

As the comments above revealed, owing to the lack of chances to practice before, it was a great challenge to the students. Posing the following question, taking notes, and using the recorders were three tasks needed to be improved. These problems were also noted in the researcher’s field note, “They don’t jot down the notes right away. They don’t know how to ask questions if the interviewee doesn’t answer their questions. Most of them can sociably pose the prepared questions and have the eye-contact with the interviewee.” (rfn, 11/21)

2. Synthesize and Present Information

Synthesis, the fifth stage of Big6 approach, emphasizes the integration and presentation of information from a variety of sources to meet the information need as defined (Eisenberg & Berkowitz, 1999). Ms. Chang and researcher asked each group students to present their mayoral candidate project to the full classes with a large poster and a written report. The criteria for evaluation included scope & depth, expression, layout, comments, and cooperation.

   Each group presented its project on the selected mayoral candidates, then provided their reviews. Other groups could question them, and they had to explain further. As the group six synthesized the candidate’s strengths and weaknesses in the presentation: “His strong point is that he loves to help people, while his weakness is that he likes to criticize a person.” (vid, 11/26) After that, other students asked many questions about this candidate, such as how did he criticize others? What has he done for helping people? Ms. Chang was very pleased with their presentations and the process of interrogation in the social studies class (rfn, 11/26).

   In the written report, the group two synthesized the candidate’s traits in a table:

<table>
<thead>
<tr>
<th>Category</th>
<th>Family</th>
<th>Policy</th>
<th>Education</th>
<th>Character</th>
<th>Service</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable for a mayor or not</td>
<td>Not</td>
<td>yes</td>
<td>So-so</td>
<td>So-so</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Their remarks were that, “We find that this candidate has strong and weak points, but nobody is perfect. Based on the table, we find that this candidate has yes in three categories, while no in only one and so-so in two categories. So this candidate is suitable to be our mayor.” (sp 2)

   As the above data showed, fifth-grade students could synthesize and present information. They have mastered basically the Big6 stages.

Problems occurring in the process of integration in elementary school curricula

Time management and curriculum integration were real issues in this study. As shown in the table 1, the curriculum covered twenty-eight periods. Except the regular thirteen classes of social studies, some language arts and arts courses, as well as one Wednesday afternoon (for interviewing activity) were all drawn on for this project. Therefore, the lack of time has been great concern for the researcher and Ms. Chang. Ms. Chang was anxious, “I didn’t have time to cover the part of central government in this unit, and students didn’t quite understand legislators yet…” (int Chang, 12/20).

   Curriculum integration is the center of the curriculum revolution in Taiwan lately. However, during this study, the science, mathematics, computer and language art all have independent instructional units and different assessment methods. Ms. Chang stated, “Our kids have had many different assignments recently. The
science teacher gave them a research project yesterday…” (int Chang 11/23) In addition, Sun Elementary School held various sports and music activities this semester. All of these separated activities made students unable to concentrate on one or two core projects.

Discussion

The results of this study indicated that through an integrated information literacy curriculum, based on Big6 approach, fifth graders experienced a meaningful social action, and grasped abilities to access, organize, and evaluate information. In the area of social studies, they understood the meaning of election in a democratic society. However, performance in solving social issues through a democratic way was weak. Teamwork was the heart of the students’ problem. More team projects might be the solution to this problem, as Pappas and Tepe (2002) stated, since students needed time and many opportunities to develop their knowledge and skills. More research needed to be done on this issue. As for the area of information literacy, their performance in interviewing improved greatly. However, posing additional questions, taking notes, and using tape recorders were three tasks which should be improved. Furthermore, most students performed well in synthesizing information. They could classify information according to the concept map, and provide their objective comments. Thus, in general, Big6 approach was suitable for integrating information literacy instruction across the contexts of subject areas.

Lack of instructional time and curriculum not-integration were two serious problems in this study. In fact, the abilities of “utilization technology and information”, “active inquiry & research”, “independent thinking and problem-solving”, which were the centers of the new curriculum in Taiwan, all should be based on information literacy. However, information skills must be taught progressively and systematically. They could not be grasped and applied into different disciplines in a short term. These findings were consistent with those reported by Eisenbreg and Berkowitz (1999). On the whole, teachers, curriculum coordinators, and any persons who were responsible for curriculum development should do their best to integrate information literacy across all curricular areas. In this way, our children shall be successful in schools, in the workplace and in the world of the 21\textsuperscript{st} century.

Educational Implications and Recommendations

There were several important implications and recommendations for educational researchers and educators to consider from the results of this study.

1. The information literacy could be integrated into related content areas of the curriculum, so that they both could be beneficial.

2. The concept of information literacy should be clearly defined, included, and well planned in the new curricula, in order to solve the problems occurred in the process of curriculum integration.

3. Teacher should arrange the whole semester or whole year curriculum which crossed different disciplines, then selected an appropriate theme for inquiring, in order to improve student’s ability to participate in social lives.

4. The future study could investigate the teacher role and parent attitudes to the integrated information
literacy curriculum, as well as the partnership between teachers and library media specialists.

References