

Article

Implementing a College Service-Learning Model to Increase Music Appreciation and Narrative Skills of Students with Intellectual Disability

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Abstract: We developed and applied a Music and Narrative Curriculum for a college community service-learning course in a special education classroom of a local secondary school. The development of the curriculum stemmed from the music appreciation courses taught at a university. The curriculum consisted of three instructional phases, each with three core literacy. This article presents how to implement an eighteen-week general music education course, including classroom training and four intervention music lessons in a special education classroom at a university.

Keywords: College service-learning, Music literacy, Narrative skills, Students with special needs, General music education

1. Introduction

Based on the educational counseling activities we have participated in cooperation between universities and local junior high schools, it was found that students with special needs in secondary schools need to strengthen their communication and social skills. In this article, it is presented how the self-created *Music and Narrative Curriculum* and *Music Literacy and Community Service-Learning* courses were implemented. In the *Music Literacy and Community Service-Learning* course, the college students enrolled helped students with intellectual disabilities (ID) at a junior high school learn how to visualize music, enhance their musical sensibility and musical imagination, and improvise them. The college students met the ID students and led them through music lessons to improve their musical literacy by serving others. In addition, self-learning, interpersonal communication, problem-solving, and serving others were practiced by the college students. To inspire college students to learn music literacy through service-learning and help ID students improve communication skills through music lessons, the following was performed:

- (1) The three teaching stages of the self-created *Music and Narrative curriculum* were described and applied to help ID students learn and acquire music literacy.
- (2) The planning and progression of the *Music Literacy and Community Service-learning* from the *Music and Narrative Curriculum* were carried out for eighteen weeks.
- (3) The effectiveness of using the *Music and Narrative Curriculum* in a special education class after four intervention music lessons was evaluated.
- (4) The growth of college students' service-learning experience and the changes in participating in service-learning through taking *Music Literacy and Community Service-Learning* were examined.

2. Literature Review

Music in Special Education was offered to explain important concepts in special education such as interdisciplinary communication and effective teamwork for students with disabilities (Adamek and Darrow, 2018). We developed an effective music curriculum to help ID students learn in groups. The inability of functional language and social interaction not only impedes the child's development but also leads to social withdrawal and isolation (Delano and Snell, 2006). By incorporating text story and plot interpretations into the course design of music literacy, the learning experience of ID students in social interaction can be increased. Conducting music activities using multi-sensational music education approaches offers opportunities for creativity and

improvisation which improve efficiency (Eren, 2014). Providing music appreciation classes not only strengthens their music literacy but also improves their ability in social communication and emotional behavior.

College students taking service-learning courses aimed to enhance their sense of personal efficacy, improve their understanding of individuals, and increase their participation in classroom experiences (Astin, Vogelgesang, Ikeda, and Yee, 2000). Through service-learning courses, students contact people of different backgrounds and understand the effect of diversity, thus benefitting from service-learning (Cox, Murray, and Plante, 2014). The evaluation of the students after engaging in service learning is based on reliability and validity. A set of scales to evaluate the service-learning experience and growth of the participants is used to test the reliability and validity (Chen and Pan, 2022). In service learning, beneficiaries include teachers through the development of new knowledge, skills, and networks or access to other resources such as friendships and connections (Crabtree, 2013). Given this, service-learning courses are used to help college students achieve their goals in self-learning and growth and enhance their musical literacy by interacting with special needs students.

3. Research Methods

3.1. Materials

In the self-created *Music and Narrative Curriculum* framework, three instructional phases were developed and applied to an eighteen-week college education course *Music Literacy and Community Service-Learning*. Fig. 1 shows the content of the Music and Narrative curriculum, including three instructional phases and nine core literacies. Table 1 presents the planning and content of weekly lessons, including music lesson services for a special education class after the midterm. We verified whether the *Music and Narrative Curriculum* framework enabled college students to improve their music literacy and self-service learning. At the same time, it was evaluated if the *Music and Narrative Curriculum* was beneficial to ID students through four intervention music lessons.

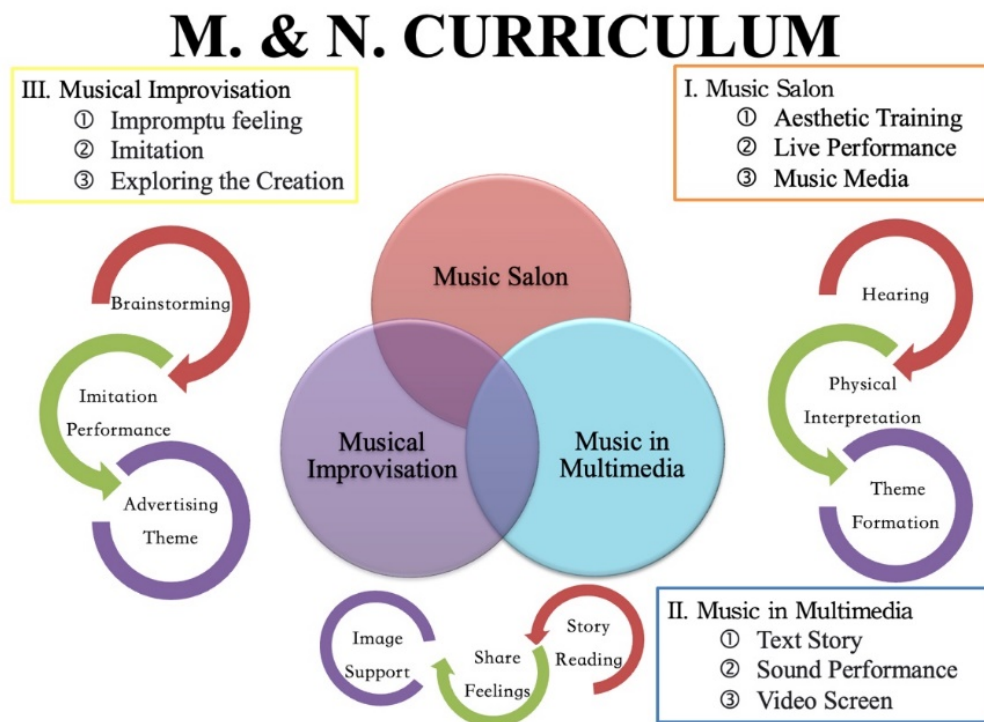


Fig 1. The content of the *Music and Narrative Curriculum*

Table 1. Eighteen-week of the *Music Literacy and Community Service-Learning*.



Week	Content	Activities	Highlight																				
1	Introduction of <i>Music and Narrative Curriculum</i>	<ol style="list-style-type: none"> Plan and goal of the <i>Music Literacy and Community Service-Learning</i> To understand intellectual disability (ID) students and four intervention music lessons. 	<p style="text-align: center;">Personnel Arrangement</p> <table border="1"> <tr> <td rowspan="5">25 college students enrolled the <i>Music Literacy and Community Service-Learning</i></td> <td rowspan="5">9 ID students in a special education class in junior high school</td> <td>Community services</td> <td rowspan="5">Number of college student served in each service 7</td> </tr> <tr> <td>Intervention Music Lesson 1</td> </tr> <tr> <td>Intervention Music Lesson 2</td> </tr> <tr> <td>Intervention Music Lesson 3</td> </tr> <tr> <td>Intervention Music Lesson 4</td> </tr> </table> <p style="text-align: center;">Intervention Music Lesson (community service) Arrangement</p> <table border="1"> <thead> <tr> <th colspan="3">Instructor/Author</th> </tr> </thead> <tbody> <tr> <td>Group 1</td> <td>1. One college student team leader + one ID student 2. One para professional + one student with high support needs</td> <td rowspan="4">Place: special education class in a junior high school</td> </tr> <tr> <td>Group 2</td> <td>Two college Students + two ID students</td> </tr> <tr> <td>Group 3</td> <td>Two college Students + two ID students</td> </tr> <tr> <td>Group 4</td> <td>Two college Students + three ID students</td> </tr> </tbody> </table>	25 college students enrolled the <i>Music Literacy and Community Service-Learning</i>	9 ID students in a special education class in junior high school	Community services	Number of college student served in each service 7	Intervention Music Lesson 1	Intervention Music Lesson 2	Intervention Music Lesson 3	Intervention Music Lesson 4	Instructor/Author			Group 1	1. One college student team leader + one ID student 2. One para professional + one student with high support needs	Place: special education class in a junior high school	Group 2	Two college Students + two ID students	Group 3	Two college Students + two ID students	Group 4	Two college Students + three ID students
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2	First Phase-Music Salon I: Aesthetic training, Live performance, Music Media	<ol style="list-style-type: none"> Analyze emotions represented by different colors. Feel the atmosphere brought by the violin's live performance. Ex. The <i>Swan</i> by Camille Saint-Saëns. 	<p style="text-align: center;">Six Colors of Emotions Color Wheel</p>  <p style="text-align: center;">Note: This picture is derived from the do2learn web page. After asking Ms. Strickland, the owner of the website, about the author of the original work, I learned that it was created by a group of part-time high school students in one summer.</p>																				
3	First Phase-Music Salon II: Aesthetic training, Live performance, Music Media	<ol style="list-style-type: none"> Feel scary and fearful music by violin's live performance. Ex. <i>Danse Macabre</i> by Camille Saint-Saëns. Practice body movement with the music. Ex. Head, Shoulders, Knees, and Toes. 																					

Table 1. Cont.



Week	Content	Activities	Highlight															
4	Second Phase- Music Multimedia I: Text story, Sound performance, Video screen	<ol style="list-style-type: none"> 1. Understand music's sonnet and poetry. Ex. The <i>Four Seasons</i> by Antonio Vivaldi. 2. Create objects' sign with the music. Ex. First movement of the <i>Spring</i>. 	<p>1st mov. of the <i>Spring</i> from the <i>Four Seasons</i> by A. Vivaldi</p> <table border="1"> <tr> <td style="text-align: center;">Sonnet</td> </tr> <tr> <td>Joyful Spring has arrived.</td> </tr> <tr> <td>The birds welcome it with their happy songs.</td> </tr> <tr> <td>And the brooks in the gentle breezes flow with a sweet murmur.</td> </tr> <tr> <td>Sky is covered with a black mantle, thunder and lightning announce a storm.</td> </tr> <tr> <td>Then they fall silent, and the birds take up again their harmonious songs.</td> </tr> </table>	Sonnet	Joyful Spring has arrived.	The birds welcome it with their happy songs.	And the brooks in the gentle breezes flow with a sweet murmur.	Sky is covered with a black mantle, thunder and lightning announce a storm.	Then they fall silent, and the birds take up again their harmonious songs.									
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5	Second Phase- Music Multimedia II: Text story, Sound performance, Video screen	<ol style="list-style-type: none"> 1. Continue the storytelling music. Ex. <i>Peer Gynt Suites</i>, Op.23 by Edvard Grieg. 2. Practice imitating the walking of the mountain king with the beats from premade video clip. Ex. <i>In the Hall of the Mountain King</i>. 	<p>Imitating the walking of the Mountain King and follows with beats</p> 															
6	Third Phase- Music Improvisation I: Impromptu feeling, Imitation, Exploring the creation	<ol style="list-style-type: none"> 1. Come up with any actions based on the music. Ex. Military March No.1 by Franz Schubert. 2. Improvise the imagination through painting. Ex. The <i>Erlking</i> by Franz Schubert. 																
7	Third Phase- Music Improvisation II: Impromptu feeling, Imitation, Exploring the creation	<ol style="list-style-type: none"> 1. Discuss a theme with suitable music. Ex. <i>Blue Danube</i> by Johann Strauss II. 2. Create a plot and fit in with music. 	<p>Example Timeline of An Advertising Theme with Music</p> <table border="1"> <tr> <td style="text-align: center;">00:00</td> <td style="text-align: center;">00:04</td> <td style="text-align: center;">00:18</td> </tr> <tr> <td>1. IN A WAITING ROOM FOR DIAGNOSIS CALL</td> <td>2. EYE EXAM ROOM</td> <td>3. DOCTOR CONFUSED</td> </tr> <tr> <td>More instruments are adding up in the music but the doctor gets confused with weird result of the patient's exam</td> <td>4. THE PATIENT IMMEDIATELY BE PUSHED TO EMERGENCY ROOM</td> <td>5. UNUSUAL RESULT OF CT SCAN</td> </tr> <tr> <td>Music starts elegantly for the beginning of the story plot</td> <td>Finally, the three beats of Waltz starts and suddenly sooth the atmosphere</td> <td>Music continues to be played smoothly and the doctor begins to diagnose the patient</td> </tr> <tr> <td></td> <td></td> <td>A famous brand of coffee cup shows in the brain of this patient</td> </tr> </table>	00:00	00:04	00:18	1. IN A WAITING ROOM FOR DIAGNOSIS CALL	2. EYE EXAM ROOM	3. DOCTOR CONFUSED	More instruments are adding up in the music but the doctor gets confused with weird result of the patient's exam	4. THE PATIENT IMMEDIATELY BE PUSHED TO EMERGENCY ROOM	5. UNUSUAL RESULT OF CT SCAN	Music starts elegantly for the beginning of the story plot	Finally, the three beats of Waltz starts and suddenly sooth the atmosphere	Music continues to be played smoothly and the doctor begins to diagnose the patient			A famous brand of coffee cup shows in the brain of this patient
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8	Preparation for community service I	<ol style="list-style-type: none"> 1. Make four sets of name tags so that each group has the same base. 2. The first group and the second group of college students practice each other's work for music lessons I and II of the school service. 															
9	Preparation for community service II	<ol style="list-style-type: none"> 1. Come up with the topic of drawing pictures. 2. Create four advertising themes. 3. Make prop for four groups. 	<p>牛奶瓶</p> <p>音樂：黃雅之、沈慶金作曲</p> <p>第一組 飾演糖大哥：趙志、應監 飾演糖小弟：謝泰、阮量 飾演大野獸：哈哈</p> <table border="1"> <thead> <tr> <th>人物</th> <th>內容</th> </tr> </thead> <tbody> <tr> <td>說書人</td> <td>好久好久以前，有三隻小糖，他們用牛奶瓶蓋房子來抵禦大野獸的來襲。糖大哥用「脆脆牌牛奶瓶」蓋房，糖小弟用「圓圓牌牛奶瓶」蓋房。</td> </tr> <tr> <td>大野獸</td> <td>哈哈～又到了肚子餓的時候了！聽說三隻小糖剛搬到這鎮上，剛好可以成為我的午餐。</td> </tr> <tr> <td>說書人</td> <td>大野獸來到糖大哥和糖小弟蓋好的牛奶瓶房子前，大聲的呼喊：糖大哥、糖小弟趕快出來，不然我就要吹倒你們的房子囉！</td> </tr> <tr> <td>大野獸</td> <td>我是最會吹氣的大野獸，讓我來吹倒糖小弟的房子吧！ 呼、呼、呼～哎呀，怎麼吹不倒，好累啊！ 那就讓我試試糖大哥的房子，呼、呼、呼～！</td> </tr> <tr> <td>說書人</td> <td>哇！糖大哥的房子倒了！仔細一看，原來是超級不耐用的「脆脆牌牛奶瓶」，果然很脆！</td> </tr> <tr> <td>大家</td> <td>「圓圓牌牛奶瓶」讚嘍！</td> </tr> </tbody> </table> <p>道具：「圓圓牌牛奶瓶」、「脆脆牌牛奶瓶」、糖大哥名牌、糖小弟名牌、大野獸名牌</p>	人物	內容	說書人	好久好久以前，有三隻小糖，他們用牛奶瓶蓋房子來抵禦大野獸的來襲。糖大哥用「脆脆牌牛奶瓶」蓋房，糖小弟用「圓圓牌牛奶瓶」蓋房。	大野獸	哈哈～又到了肚子餓的時候了！聽說三隻小糖剛搬到這鎮上，剛好可以成為我的午餐。	說書人	大野獸來到糖大哥和糖小弟蓋好的牛奶瓶房子前，大聲的呼喊：糖大哥、糖小弟趕快出來，不然我就要吹倒你們的房子囉！	大野獸	我是最會吹氣的大野獸，讓我來吹倒糖小弟的房子吧！ 呼、呼、呼～哎呀，怎麼吹不倒，好累啊！ 那就讓我試試糖大哥的房子，呼、呼、呼～！	說書人	哇！糖大哥的房子倒了！仔細一看，原來是超級不耐用的「脆脆牌牛奶瓶」，果然很脆！	大家	「圓圓牌牛奶瓶」讚嘍！
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10	Intervention Music Lesson I	First Phase-Music Salon (Special education classroom)															
11	Intervention Music Lesson II	Second Phase- Music Multimedia (Special education classroom)															
12	Intervention Music Lesson III	Experience A String Quartet Live Performance (Special education classroom)															

Table 1. Cont.

Week	Content	Activities	Highlight
13	Intervention Music Lesson IV	Third Phase-Music Improvisation (Special education classroom)	
14			
15			
16		Organize four times of community service information	
17			
18	On-Line Result Announcement		

3.2. Methods

Students who participated in the courses comprised twenty-five college students enrolled in *Music Literacy and Community Service-Learning* and nine junior high school students with ID in a special education classroom. Six females (67%) and 3 males (33%) participated as junior high school students with ID (mean age = 13.97 years). They were between the ages of twelve through fourteen years and eligible for special education and related services under the Special Education Act of Taiwan. Students in a special education classroom participated in the *M. and N. curriculum* for four intervention music lessons in the art courses. The nine students were contacted and their parents/guardians agreed to participate in the intervention study.

3.3. Implementaion Procedure

During the first week of course training, college students filled out a questionnaire of the pre-test Service-Learning Experience and Service-Learning Experience Growth published by Psychological Publishing Co., Ltd. in Taiwan and took a 3-hour instructional session every week for 9 weeks for the *M. and N. curriculum* training. Training materials included the three instructional phases of Music Salons, Music Multimedia, and Music Improvisation. College students started to serve in the community after a total of nine weeks of the course before the mid-term exam. In the courses, we delivered 1-hour intervention music lesson per week for four weeks. Twenty-five college students were divided into four groups in the intervention music lesson. Nine students participated in small group instructions given by seven college students. After each lesson, the group leader of college students produced a short video clip to show the results. Therefore, four short videos were submitted as the outcome of the intervention music lessons. After the fourth intervention lesson, a satisfaction survey for music lessons was carried out for the nine ID students. Figure 2 shows the results of the survey. Three questions were included in the survey with a score of one to five, dislike very much, dislike, okay, like, and very satisfied. The three questions were “Do you like these music lessons?”, “Do you like the author’s teaching?”, and “Do you like interacting with big brothers and sisters?”. The twenty-five college students who took the course completed the post-test of the Service-Learning Experience and Service-Learning Experience Growth in the last eighteenth week of the *Music Literacy and Community Service-learning* course.

Table 2. Intervention music lesson satisfaction survey.

PLEASE CIRCLE THE ANSWERS

Q.1 Do you like these music lessons?				
1	2	3	4	5
☹️	😞	😐	😊	😄
DISLIKE VERY MUCH	DISLIKE	OKAY	LIKE	VERY SATISFIED

Q.2 Do you like the author’s teaching?				
1	2	3	4	5
☹️	😞	😐	😊	😄
DISLIKE VERY MUCH	DISLIKE	OKAY	LIKE	VERY SATISFIED

Q.3 Do you like interacting with big brothers and sisters?				
1	2	3	4	5
☹️	😞	😐	😊	😄
DISLIKE VERY MUCH	DISLIKE	OKAY	LIKE	VERY SATISFIED

3.4. College Student Service-Learning Experience and Growth Outcomes

The content of the pre-and post-tests included the Service-Learning Experience Scale (23 items) and the Service-Learning Growth Scale (72 items). Table 3 details the scales and the items. The Service-Learning Experience Scale was used to evaluate personal preferences for participating in service learning, including the positive service-learning experience subscale and the negative service-learning experience subscale. Service-Learning Growth Scale was used to evaluate personal growth or change by participating in service learning. There were four subscales with eight dimensions. The first subscale was the self-growth subscale to evaluate the growth of individuals including two dimensions: self-affirmation ability and self-management ability. The second subscale was the interpersonal growth subscale to assess the growth of individuals and group interactions, including two dimensions: interpersonal skills and interpersonal communication skills. The third subscale was the intellectual growth subscale to assess the growth of individuals in knowledge acquisition and problem-solving ability, including two dimensions: active learning ability and problem-solving ability. The fourth subscale was the civic responsibility subscale to assess the individual’s participation in social activities and service groups, as well as the awareness of the growth needed by others, including two dimensions: the ability to serve the group and the ability to perceive altruism.

Table 3. Measuring service-learning experience and growth scales.

Scales		Items	
The Service-Learning Experience Scale	The positive service-learning experience	15	
	The negative service-learning experience	8	
The Service-Learning Growth Scale	The Self-Growth Subscale	Self-affirmation ability	8
		Self-management ability	10
	The Interpersonal Growth Subscale	Interpersonal skills	10
		Interpersonal communication skills	8
	The Intellectual Growth Subscale	Active learning ability	13
		Problem-solving ability	5
	The Civic Responsibility Subscale	The ability to serve the group	13
		The ability to perceive altruism	5

Note:

1. The calculation formula of the scale is based on the Service-Learning Experience and Growth Scales issued by Psychological Publishing Co., Ltd. in Taiwan.
2. In the T-score table, the lowest is 40 and the highest is 80.
3. The higher the score, the higher personal feeling of the service-learning experience.

Process of Measuring 25 College Students:

1. Pre-test: Before taking course, fill out 95 items of both scales.
2. Post-test: After taking course, fill out 95 items of both scales.
3. Calculate the pre- and post- test scores of both scales
4. Convert original score to T-score.
5. Comparing pre- and post-test T-score for growth or decline.
6. Calculate growth and decline ratios for each scale.

4. Results

Nine ID students in the special education classroom corresponded to a three-question survey on intervention music lesson satisfaction. If the total score of the three questions was more than 9 points, the satisfaction with the course was above average. Table 4 illustrates the intervention music lessons satisfaction survey result of the nine ID students.

Table 4. Intervention Music Lessons Satisfaction Survey.

Number of ID Students	Q.1 Do you like these music lessons? (1-5 points)	Q.2 Do you like the author's teaching (1-5 points)	Q.3 Do you like interacting with big brothers and sisters? (1-5 points)	Average Points of Every Student's Answers
<u>1</u>	5	5	4	4.7
<u>2</u>	4	5	4	4.3
<u>3</u>	5	5	5	5
<u>4</u>	4	5	1	3.3
<u>5</u>	5	5	5	5
<u>6</u>	5	5	5	5
<u>7</u>	4	4	4	4
<u>8</u>	4	5	4	4.3
<u>9</u>	4	4	4	4
Average Point for Each Answer	4.4	4.8	4	
Overall Average Answer Points			4.4	
Overall Answers Satisfaction%			88%	

Supplementary Note:

1. Three students gave 100% satisfaction to the three questions. This 100% satisfaction rate accounts for 1/3 of the overall.
2. One student's average point was 3.3. Although it was slightly higher than the average score of 3, it was the lowest point of all. The main reason was that the third question was only given 1 point.
3. In addition, the remaining eight students scored higher than 4 points on the three questions.

The result of the Service-Learning Experience and Growth Scale survey of the twenty-five college students was compiled using a five-point Likert scale with scores of 1 for "not at all", 2 for "some of them", 3 for "half of them", 4 for "most of them", and

5 for “Exactly match.” The larger the number, the higher the matching degree of the description. The detailed items are presented in Table 5. Table 5 shows the total points of the nine ID students who completed the intervention music lessons satisfaction survey. The result in overall answer points was 4.4, and overall satisfaction was 88%. Only one ID student scored 1 for the third question showing the special needs of the student. The results were converted to T-scores and compared between pre-and post-tests in each scale to understand the rate of perceived self-growth and perceived self-declining. Table 5 shows the detailed result. The students scored 92 % for self-growth and 8 % for self-declining.

Table 5. Measuring twenty-five college students’ service-learning experience and growth outcomes.

The Service-Learning Experience Scale			
Scales	Subscales	Rate of perceived self-growth	Rate of perceived self-declining
The Service-Learning Experience Scale	The positive service-learning experience	96%	4%
	The negative service-learning experience	88%	12%
Average		92%	8%
The Service-Learning Growth Scale			
Scales	Subscales	Rate of perceived self-growth	Rate of perceived self-declining
The Self-Growth Subscale	Self-affirmation ability	84%	16%
	Self-management ability	72%	28%
The Interpersonal Growth Subscale	Interpersonal skills	88%	12%
	Interpersonal communication skills	92%	8%
The Intellectual Growth Subscale	Active Learning Ability	76%	24%
	Problem-solving ability	76%	24%
The Civic Responsibility Subscale	The ability to serve the group	88%	12%
	The ability to perceive altruism	72%	28%
Average		81%	19%
Overall Average		86.5%	13.5%

Note: The above values are based on the Service-Learning Experience and Growth Scales issued by Psychological Publishing Co., Ltd. in Taiwan through 25 college students who answered before and after taking the *Music Literacy and Community Service-Learning*.

There were four subscales with eight dimensions in the Service-Learning Growth Scale: interpersonal growth subscale, intellectual growth subscale, and civic responsibility subscale. The pre-test and post-test results of the Service-Learning Growth Scale showed that 81% of students felt significant growth in the four subscales, while 19% felt a decline in the four subscales. Twenty-one students (86%) felt self-growth and four students (14%) felt self-declining. This result showed that the majority of the college students who took the *Music Literacy and Community Service-Learning* course felt that they had grown after they participated in service learning, but three students could not feel that they had grown. Overall, the results of the *M. and N. Curriculum Satisfaction Survey*, the *Service-Learning Experience Scale*, and the *Service-Learning Growth Scale* supported the implementation of the *Music and Narrative Curriculum* and *Music Literacy and Community Service-Learning* course.

5. Conclusions and Future Works

This study was conducted to verify the feasibility of teaching *Music and Narrative Curriculum* among college and ID students. The positive results of the satisfaction survey for intervention music lessons confirmed the pedagogical structure and logical progression of the *Music and Narrative Curriculum*. The participating college students enrolled in *Music Literacy and Community Service-Learning* showed that 86% of them felt self-growth. Only four students were negative in service learning as this course was a general music course and they might have certain knowledge which limited their feeling in further growth. From this initial research, educators can obtain an idea of how to use the *Music and Narrative Curriculum* to support ID students in developing musical literacy, story imagination, and interactive improvisation for better social inclusion.

Although the results of this research showed a significant improvement in self-growth and the satisfaction rate of the ID students as high as 88%, the *Music and Narrative Curriculum* still needed to improve its content for the music literacy of the ID students and college students. Participation in this study was limited to nine ID students and twenty-five college students. A larger number of participants is necessary to validate the effect of the courses on self-growth and adjust the content of the courses. Although service-learning experience and growth were obtained, it is necessary to examine more how college students feel about the progress of their music literacy learning. In the music intervention course for ID students, it is required to increase the number of lessons as the ID students were satisfied with a rate of 88%. A standardized test for testing is also necessary for students to improve their social skills through music courses.

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