

A Study on the Operation of Librarian Learning Communities and Competency Improvement

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ABSTRACT

In this study, we collaborated with the National Library of Korea's Library Education Institute to pilot the operation of a librarian learning community and aimed to measure its effectiveness based on the improvement of librarian competencies. A total of 28 participants attended four programs, and the research results are as follows: First, when analyzing competencies in terms of community capacity, attitude competency was the highest, followed by knowledge and skills competencies in that order. The correlation analysis among competencies showed that there were mutual correlations among the three competencies. Second, in the pre-post analysis of the three competencies and their sub-competencies, it was found that all competencies, including sub-competencies, improved. Based on the research results, it was confirmed that through the operation of the librarian learning community, the average competencies of librarians can be improved, which can directly impact the enhancement of the library's service capabilities. Therefore, it is believed that there is a need to activate the operation of librarian learning communities and explore nationwide dissemination strategies for the operating model.

1. Introduction

In July 2011, the Minnesota Legislature passed House File No. 26 (HF 26), a revised version of the statewide teacher evaluation system. This legislation brought significant changes to the state of Minnesota, one of which was the encouragement of Professional Learning Communities (PLC) in public schools. Despite the endorsement of PLC in Minnesota's public schools, there has been a scarcity of research assessing the effectiveness of PLC implementation. In the United States, Daniel Johnson (2011) utilized the Standard Inventory Assessment (SAI) developed by the National School Development Council (NSDC) to evaluate the effectiveness of PLC during the period of its widespread adoption. Following a one-year implementation of PLC, the study measured shifts

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in teachers' perceptions before and after the implementation. This assessment tool explored key concepts in teaching and learning, comprising 12 factors and 60 questions.

With increasing interest in PLC both domestically and internationally, and substantial progress in research aimed at measuring their effectiveness, this study focuses on conducting a community capacity assessment of a librarian learning community. In this context, the concept of community capacity previously named in terms of civic consciousness (Yoon Seong-hye, 2017; Cogan, 2000; Binkley et al., 2012), participation awareness (Griffin, McGaw, & Care, 2011; Kang et al., 2010), and social competence (Lee Geun-ho et al., 2012; OECD, 2005), was initially introduced as one of the core competencies that creative and integrative talents should possess according to the revised curriculum in 2015. The concept of community capacity has been discussed in terms of the ability to practice values and attitudes, the ability to participate, interact, and coexist within a community (Han Hye-jeong et al., 2015; Bartels & Weatherburn, 2020; Binkley et al., 2012; Kang et al., 2010; OECD, 2005).

Amidst diverse discussions on community capacity by researchers and institutions both domestically and internationally, the Ministry of Education defines community capacity as 'the ability to embrace and practice the values and attitudes required as members of the local, national, and global community, the ability to actively participate with a sense of responsibility in resolving diverse issues at local, national, and global levels, the ability to collaborate and interact harmoniously with various individuals, and the ability to considerate of others and coexist together' (Ministry of Education, 2015).

This study sought to gauge the competency of librarian communities by elucidating the concept of community capacity. The study followed the definition by Lee Sung-ja and Im Eun-mi (2021), stating that community capacity involves the ability of individuals, as members of a community (department, university, society), to accept and practice the knowledge, skills, and attitudes required for individuals to have agency and achieve harmonious development within the community to which they belong.

Under this definition, this study aimed to collaboratively operate a librarian learning community in partnership with the National Library of Korea's Librarian Education Institute and to experimentally assess the effectiveness of the community operation based on improvements in librarians' competencies.

2. Prior Research

In this study, an analysis of domestic and international prior research was conducted to ascertain the effectiveness of Professional Learning Communities and the results showed a notable absence of research concerning librarian learning communities. In the United States, Johnson (2011) developed a measurement tool to assess the status of PLC using the conceptual framework presented in DuFour et al.'s (2010) book 'Learning by Doing: A Handbook for Professional Learning Communities at Work' (2nd Ed). The tool addresses key characteristics of PLC, encompassing six factors—learning focus (6 items), collaborative culture (6 items), group inquiry (6 items), action orientation (5 items), continuous improvement (5 items), and result orientation (3 items)—and consists of a total of 31 questions. For instance, in the case of 'learning focus,' the item was

structured as follows: “The essence of a learning community is to focus and make efforts on each student’s learning.”

In South Korea, Song Kyung-oh and Choi Jin-young (2010) also extracted common elements for constructing a learning community based on literature on learning communities and developed survey questions accordingly. The survey questionnaire consists of a total of 23 items organized into six factors: leadership sharing (3 items), vision sharing (3 items), emphasis on teachers’ student learning (2 items), teacher collaboration (7 items), inquiry culture (4 items), and structural conditions (4 items). Findings from their research show that teachers participated by providing responses to each questionnaire item using a 4-point scale to express their degree of agreement and interpreted responses scoring below 3 points as an indication of perceiving the state of teacher learning communities in their schools as insufficient or inadequate.

Kim Min-jo et al. (2016) underscored the significance of cultural elements within educational institutions for the establishment and activation of teacher learning communities. In this context, the researchers delineated key measurement factors associated with school culture to facilitate the assessment and enhancement of teacher learning community formation and activation. The measurement tool consisted of a total of 25 items, organized into 4 factors: quality of learning experiences (5 items), teacher commitment to professionalism (6 items), fulfillment of student needs (7 items), and leadership and school management (7 items). Development and Application of a Professor’s Professional Learning Community Diagnostic Scale (Lee Seok-yeol, 2021), the measurement tool was developed through thorough exploration and validation processes, reflecting the components of professional learning communities discussed by previous scholars. In response to the heightened emphasis on the significance of ‘professional learning communities’ within school environments, the objective of the study was to create a diagnostic tool for assessing the status and effectiveness of these communities. The research results are summarized as follows. First, the study explored the concept of diagnosing professional learning communities by analyzing and integrating variables that can measure professional learning communities within school organizations. Second, in the development of a diagnostic scale for professional learning communities, an exhaustive process involving sub-factor and item appropriateness reviews, alongside rigorous validity and reliability assessments, the study developed a diagnostic scale comprising 24 items categorized into 4 pivotal factors: student growth and learning promotion (4 items), collaborative culture (4 items), group inquiry (6 items), and practice and continuous improvement (10 items). The scale exhibited commendable reliability, with Cronbach’s alpha coefficients ranging from .87 to .96 for individual sub-factors and the overall alpha coefficient of .98. Third, the validated diagnostic scale was administered to teachers in schools both with and without professional learning communities, revealing that teachers in schools with active communities held a more positive perception of the proficiency levels of professional learning communities in comparison to their counterparts in schools without such communities. These findings collectively affirm the diagnostic scale’s overall validity, establishing it as a robust tool for comprehensively evaluating professional learning communities.

Meanwhile, Jeong Jin-kyung (1999) developed a sense of community scale for college students, deriving a six-factor structure with 24 items (intimacy and belonging, harmony and unity, voluntary

participation and expression of opinions, identification and sharing of goals, autonomy and public consciousness, authoritative/exclusive group bias). Balboni et al. (2018) derived a three-factor structure (sense of belonging, mutual influence, need satisfaction) with 36 items to measure the Sense of Community Index (SCI). Additionally, in Peterson, Speer, & Hughey's (2006) study on the sense of community, they measured a four-factor structure (member consciousness (sense of belonging), mutual influence, need satisfaction, shared emotional connection) with 8 items.

Also, Lee Sung-ja and Im Eun-mi's study in 2021 focused on the development and validation of a community capacity scale tailored for college students. To accomplish this, the domains of community capacity were established by drawing upon prior research. Subsequently, items were crafted for each domain, and the content validity of these items was assessed by a panel of 10 experts, resulting in the creation of 55 preliminary items. A preliminary survey with 111 university students was conducted in Seoul, Gyeonggi, and Jeonbuk regions, and based on the analysis of their responses, a main survey questionnaire comprising 46 items was developed. The main survey, targeting 609 university students, was subsequently administered in the Seoul-Gyeonggi, Chungbuk-Chungnam, and Jeonbuk-Jeonnang regions.

The results of the main survey, subjected to exploratory factor analysis, revealed a hierarchical factor structure for the community capacity scale. The domain of knowledge (5 items) constituted a single factor, while the domain of skills consisted of three sub-factors: collaboration (5 items), interpersonal relations (5 items), and problem-solving (3 items). The domain of attitudes comprised four sub-factors: dedication (7 items), unity (4 items), multicultural acceptance (3 items), and fairness (3 items). The total number of items in the community capacity scale was 35. To ensure the validity of the community capacity scale, various analyses were conducted, including construct validity, concurrent validity, cross validation, internal consistency, and test-retest reliability, confirming the scale's overall validity. Finally, the study's significance, limitations, and suggestions for future research were discussed.

This study reviewed various diagnostic tools developed in previous research, primarily building upon diagnostic instruments developed by Lee Sung-ja and Im Eun-mi (2021), as well as diagnostic tools developed by Lee Seok-yeol (2021).

3. Research Design and Methodology

3.1 Development Process of Librarian Learning Community Capacity Diagnostic Tool

The development and validation of a scale to measure the core values and competencies of a learning community are necessary, and the process involves the following steps. However, in this study, the validity of the developed scale is being verified using the FGI (Focus Group Interview) technique.

Table 1. Development Process of Librarian Learning Community Capacity Diagnostic Tool

Step	Description
Comprehensive Analysis of Relevant Research	<ul style="list-style-type: none"> Investigate and analyze prior research on librarian learning communities and community capacity. Examine research and case studies related to the development of diagnostic tools for librarian learning communities and community capacity. Conduct a comprehensive analysis and derive implications.
Development of Measurement Items for Librarian Learning Communities and Community Capacity	<ul style="list-style-type: none"> Define librarian learning communities and community capacity. Define diagnostic items for librarian learning communities and community capacity. Derive diagnostic items for librarian learning communities and community capacity. Finalize the draft of the measurement tool for librarian learning communities and community capacity.
Focus Group Interview (FGI) for Tool Validity Verification	<ul style="list-style-type: none"> Verification Technique: Focus Group Interview (FGI). Size and Composition of FGI: 7 members (experts in measurement tools, learning communities, community capacity, library and information science professors, and practicing librarians). Number of FGI Sessions: 1 session (Enhanced efficiency by conducting two intensive discussions among the research team before FGI). Verification of tool validity, including content validity, structural validity, consistency, and reliability.
Finalization of the Tool	<ul style="list-style-type: none"> Ultimately confirm diagnostic items for librarian learning communities and community capacity.

Through this process, developed scales can be effectively utilized to support learning communities in enhancing their core values and capacity, facilitating continuous growth and development.

3.2 Development of a Learning Community Effectiveness Diagnostic Tool and Community Capacity Diagnostic Tool

3.2.1 Development of a Preliminary Learning Community Effectiveness Diagnostic Tool and Community Capacity Diagnostic Tool

In the present study, it was sought to establish and operate librarian learning communities, analyze the operational effectiveness of these communities, and diagnose community capacity. To achieve this, a draft of diagnostic tools for the effectiveness of librarian learning communities and the diagnosis of community capacity, based on diagnostic instruments developed in the previous research reviewed earlier, was established. The definitions for librarian learning communities and community capacity used in the diagnostic tools for learning community effectiveness and community capacity, along with definitions for each respective diagnostic scale, are as follows:

Table 2. Definition of Librarian Learning Community Competency and Definitions for Each Scale

Item	Description	
Definition of Librarian Learning Community	A professional learning community that aims to enhance the expertise of [librarians] by sharing values and visions, fostering voluntary participation, emotional affiliation, collaborative learning processes, continuous circulation, and more, all based on shared outcomes and practices.	
Definition of Diagnostic Scale	Growth and Information Utilization Enhancement	Striving to achieve the vision and goals set for the enhancement of users' growth and information utilization competency
	Collaborative Culture	Collaborating, communicating, and sharing knowledge and information to achieve common goals
	Group Inquiry	Developing new skills and abilities through team learning, advancing professional experiences, and attitudes.
	Practice and Continuous Efforts	Practicing and continually improving to enhance users' growth and information utilization competency and achieve better result
Definition of Community Competency	The ability to accept and practice the knowledge, skills, and attitudes required of individuals to achieve harmonious development with the community (department, university, society) in which they belong, maintaining individual agency	
Definition of Diagnostic Scale	Knowledge	Information, facts, concepts, or theories that individuals or organizations learned about a specific topic or field
	Skill	Collaboration skills, interpersonal skills, problem-solving skills.
	Attitude	Dedication, a sense of unity, multicultural acceptance, fairness.

The draft of the effectiveness diagnostic tool for learning communities and the diagnostic tool for community capabilities is as follows in Table 3. The target of the diagnosis is librarians participating in librarian learning community activities.

In the following diagnostic tool questions, the subject of the given statements is librarians participating in librarian learning communities.

Table 3. Effectiveness diagnosis of librarian learning communities and community capacity diagnosis tools

Item	Contents	Reference	
General	Participants' characteristics	Gender / Age group / Occupation / Frequency of participation in general education programs)	
Professional Learning Community Diagnostic Scale	Growth and Information Utilization Enhancement	<ul style="list-style-type: none"> - Librarians share a vision and values aimed at the growth and enhancement of information utilization for users. - Librarians value users' information use and growth. - Librarians provide necessary time and support to users experiencing difficulties in information use. - Librarians strive for users' holistic growth. 	Lee Seok-yeol (2018)
	Cultural Collaboration	<ul style="list-style-type: none"> - Librarians collaborate for service improvement. - Librarians seek advice or assistance from each other. - Librarians share methods for users' information use education. - Librarians form respectful and collaborative relationships with each other. 	

Group Inquiry		<ul style="list-style-type: none"> - Librarians explore together for professional development. - Librarians develop information use strategies with colleagues. - Librarians engage in team learning activities for new information use techniques and applications. - Librarians jointly research methods for users' information use education and growth. - Librarians make decisions on information use activities based on data and related information. - Librarians jointly devise methods for users' information use guidance. 	
Practice and Continuous Efforts		<ul style="list-style-type: none"> - Librarians apply what they learn in the learning community to library services. - Librarians accept and apply feedback on information use and service issues from each other. - Librarians apply suitable teaching methods to educate users for information utilization skill improvement. - Librarians make various attempts for users' growth and information utilization enhancement. - Librarians diagnose overall learning community activities based on users' growth and improvement in information utilization abilities. - Librarians develop service improvement measures in the learning community based on users' performance outcomes. - Librarians participate in continuous discussions and debates for users' growth and information utilization enhancement. - Librarians check and improve users' growth and information use status. - Librarians continuously monitor the institution's goal achievement based on users' performance outcomes. - Librarians make continuous efforts to reflect on the direction of the learning community. 	
Community Knowledge Capacity Scale		<ol style="list-style-type: none"> 1. I can make decisions independently in the community (department, university, society, etc.). 2. I am good at understanding emotions in the community. 3. I know my role and position in the community. 4. I know how community members think of me. 5. I know the direction the community should go in. 	Lee Sung-ja, Im Eun-mi (2021)
	Skill	<p style="text-align: center;">Collaboration Skill</p> <ol style="list-style-type: none"> 6. I collaborate with team members to achieve the community's goals. 7. I harmoniously collaborate in the community by sufficiently reflecting the opinions of members. 8. I collaborate by considering the other person's perspective. 9. When working in the community, I cooperate with others to increase efficiency. 10. I actively collaborate on tasks in the community. 	
	Skill	<p style="text-align: center;">Interpersonal Skill</p> <ol style="list-style-type: none"> 11. I can easily get along with other people. 12. I can have a natural conversation with people I meet for the first time. 	

	13. I can establish good relationships with community members.
	14. I have affection and interest in community members.
	15. I am flexible in dealing with changes in community members.
Problem-Solving Skill	16. When a problem arises in the community, I can identify the cause.
	17. I can solve conflicts in the community when they arise.
Attitude Dedication	19. I do my best in the tasks assigned to me in the community.
	20. I actively participate in performing community tasks.
	21. I complete the tasks assigned to me in the community.
	22. I proactively find and do what's needed done in the community.
	23. I maximize my capabilities for the development of the community.
	24. I voluntarily participate in community activities.
	25. I believe that actively participating in community activities contributes to the development of the community.
Unity	26. I think of the development of the community as my own development.
	27. I prioritize community work more than other tasks.
	28. I enjoy living with people in the community.
	29. I feel that I belong to the community.
Multicultural Acceptance	30. I acknowledge and respect cultural differences in the community.
	31. I make efforts to move away from cultural biases and stereotypes.
	32. I acknowledge that others may have different thoughts and emotions than me.
Fairness	33. Every member of the community should have equal opportunities regardless of their contribution to the community's development.
	34. I think something achieved through unfair means has no value.
	35. I prioritize maintaining the community's norms and order even if it causes some disadvantages / harm to me.
Other Comments	
Total	

3.2.2 *The Effectiveness and Validation, and Finalization of the Community Capacity Diagnostic Tool for Librarian Learning Communities*

In this study, Focus Group Interview (FGI) technique was employed to validate the diagnostic tool for the effectiveness and community capacity of librarian learning communities. The FGI comprised

a total of 7 members, including experts from various fields. Specifically, experts in measurement tools, learning communities, community capacity, library and information science professors, and practicing librarians were evenly appointed to the group.

The number of FGI sessions was set to 1, but to enhance the efficiency of expert meetings, there were two intensive discussions among the six researchers before the FGI session. Given the researchers' extensive experience in library and information science as well as competency measurement studies, the effectiveness achieved was equivalent to conducting 3 FGI sessions.

To validate the developed scale, reviews were conducted on content validity, structural validity, consistency, and reliability. Content validity verified whether the items align with the actual concepts being measured, while structural validity examined whether the arrangement of scale items corresponds to the composition of the actual concepts. Consistency assessed the internal coherence of the scale, and reliability ensured the stability and consistency of the measurement tool. The FGI was conducted online via Zoom on May 10, 2023, and the finalized definitions for librarian learning community and community capacity, along with definitions for each scale, are as follows:

Table 4. Definition of Librarian Learning Community Capacity and Definitions for Each Scale

Item	Description
Definition of Librarian Learning Community	A professional learning community that aims to enhance the expertise of [librarians] by sharing values and visions, fostering voluntary participation, emotional affiliation, collaborative learning processes, continuous circulation, and more, all based on shared outcomes and practices.
Definition of Diagnostic Scale	<p>Growth and Information Utilization Enhancement Striving to achieve the vision and goals set for the enhancement of users' growth and information utilization competency</p> <p>Collaborative Culture Collaborating, communicating, and sharing knowledge and information to achieve common goals</p> <p>Group Inquiry Developing new skills and abilities through team learning, advancing professional experiences, and attitudes.</p> <p>Practice and Continuous Efforts Practicing and continually improving to enhance users' growth and information utilization competency and achieve better result</p>
Definition of Community Capacity	The ability to accept and practice the knowledge, skills, and attitudes required of individuals to achieve harmonious development with the community (department, university, society) in which they belong, maintaining individual agency
Definition of Diagnostic Scale	<p>Knowledge Decision-making ability, emotional understanding ability, ability to recognize roles and positions, ability to perceive one's role as a member, and ability to understand the direction of community development.</p> <p>Skill Collaboration skills, interpersonal skills, problem-solving skills.</p> <p>Attitude Dedication, a sense of unity, multicultural acceptance, fairness.</p>

Based on the above FGI results, the final and confirmed items for the librarian learning community's community capacity scale are as follows:

Table 5. Librarian Learning Community Effectiveness Diagnostic Tool.

Item	Contents
General	Participants' characteristics Gender / Age group / Occupation / Frequency of participation in general education programs
Professional Learning Community Diagnostic Scale	<ul style="list-style-type: none"> Growth and Learning Promotion <ul style="list-style-type: none"> - Librarians share a vision and values aimed at the growth and enhancement of information utilization for users. - Librarians value users' information use and growth. - Librarians provide necessary time and support to users experiencing difficulties in information use. - Librarians strive for users' holistic growth. Cultural Collaboration <ul style="list-style-type: none"> - Librarians collaborate for service improvement. - Librarians seek advice or assistance from each other. - Librarians share methods for users' information use education. - Librarians form respectful and collaborative relationships with each other. Group Inquiry <ul style="list-style-type: none"> - Librarians explore together for professional development. - Librarians develop information use strategies with colleagues. - Librarians engage in team learning activities for new information use techniques and applications. - Librarians jointly research methods for users' information use education and growth. - Librarians make decisions on information use activities based on data and related information. - Librarians jointly devise methods for users' information use guidance. Practice and Continuous Efforts <ul style="list-style-type: none"> - Librarians apply what they learn in the learning community to library services. - Librarians accept and apply feedback on information use and service issues from each other. - Librarians apply suitable teaching methods to educate users for information utilization skill improvement. - Librarians make various attempts for users' growth and information utilization enhancement. - Librarians diagnose overall learning community activities based on users' growth and improvement in information utilization abilities. - Librarians develop service improvement measures in the learning community based on users' performance outcomes. - Librarians participate in continuous discussions and debates for users' growth and information utilization enhancement. - Librarians check and improve users' growth and information use status. - Librarians continuously monitor the institution's goal achievement based on users' performance outcomes. - Librarians make continuous efforts to reflect on the direction of the learning community.

As a tool for measuring the extent to which participants' community capacities have improved after operating a librarian learning community, the finally confirmed Community Capacity Diagnostic Tool is as follows:

Table 6. Librarian Learning Community Pre-post Community Capacity Diagnostic Tool

Item		Contents
General	Participants' characteristics	Gender / Age group / Occupation / Frequency of participation in general education programs
Community Knowledge Capacity Scale		<ol style="list-style-type: none"> 1. I can make decisions independently in the community (department, university, society, etc.). 2. I am good at understanding emotions in the community. 3. I know my role and position in the community. 4. I know how community members think of me. 5. I know the direction the community should go in.
	Skill	<ol style="list-style-type: none"> 6. I collaborate with team members to achieve the community's goals. 7. I harmoniously collaborate in the community by sufficiently reflecting the opinions of members. 8. I collaborate by considering the other person's perspective. 9. When working in the community, I cooperate with others to increase efficiency. 10. I actively collaborate on tasks in the community.
	Interpersonal Skill	<ol style="list-style-type: none"> 11. I can easily get along with other people. 12. I can have a natural conversation with people I meet for the first time 13. I can establish good relationships with community members. 14. I have affection and interest in community members. 15. I am flexible in dealing with changes in community members.
	Problem-Solving Skill	<ol style="list-style-type: none"> 16. When a problem arises in the community, I can identify the cause. 17. I can solve conflicts in the community when they arise.
	Attitude	<ol style="list-style-type: none"> 19. I do my best in the tasks assigned to me in the community. 20. I actively participate in performing community tasks. 21. I complete the tasks assigned to me in the community. 22. I proactively find and do what's needed done in the community. 23. I maximize my capabilities for the development of the community. 24. I voluntarily participate in community activities. 25. I believe that actively participating in community activities contributes to the development of the community.
	Unity	<ol style="list-style-type: none"> 26. I think of the development of the community as my own development. 27. I prioritize community work more than other tasks. 28. I enjoy living with people in the community. 29. I feel that I belong to the community.
	Multicultural Acceptance	<ol style="list-style-type: none"> 30. I acknowledge and respect cultural differences in the community. 31. I make efforts to move away from cultural biases and stereotypes. 32. I acknowledge that others may have different thoughts and emotions than me.
	Fairness	<ol style="list-style-type: none"> 33. Every member of the community should have equal opportunities regardless of their contribution to the community's development. 34. I think something achieved through unfair means has no value. 35. I prioritize maintaining the community's norms and order even if it causes some disadvantages / harm to me.

3.3 Librarian Learning Community Pilot Operation Procedures and Design Contents

3.3.1 Pilot operation process and procedures

The pilot operation was conducted in a condensed form of the librarian learning community model, encompassing the entire process over a short period of 7 weeks. Each community planned and conducted a minimum of three online meetings. After the issuance of the 「Librarian Learning Community Application Guidelines,」 we received applications for participation over approximately 5 days, with a total of 28 applicants. The groups included 13 in the expert mentorship category (writing book reviews utilizing ChatGPT), 6 in the semi-autonomous design category (library marketing and promotion), 4 in the semi-autonomous design category (library’s community services), and 2 teams (11 members) in the autonomous design category. The pilot operation process of the librarian learning community is as follows:

Table 7. Librarian Learning Community Pilot Operation Process

Date	Activities
Aug. 25 (Fri)	<ul style="list-style-type: none"> • Group ice breaking (self-introduction, reasons for participation, sharing of goals) • Formulation of individual learning plans for each community and coordination of future learning schedules <p style="margin-left: 20px;">Note: For the expert mentorship category, the expert shares the established plan and makes partial adjustments based on the participants’ demands.</p> <ul style="list-style-type: none"> • Role assignment and designation of facilitator among the members
~	<ul style="list-style-type: none"> • Group Activities
Oct. 13 (Fri)	<ul style="list-style-type: none"> • Completion of Group Activities

3.3.2 The Monitoring Process of the Pilot Operation

The purpose of the pilot operation is to proactively identify potential issues that may arise before launching the librarian learning community and to highlight insights for operation. To achieve this, a monitoring process, including active guidance and consulting by the research team, has been added to the pilot operation. Specifically, the research team’s monitoring process consists of three stages: kick-off meeting, interim consulting, and final performance sharing session, establishing a continuous feedback system throughout the pilot operation process. The objectives of each stage are outlined in <Table 8>.

Table 8. Monitoring Process of the Librarian Learning Community Pilot Operation

Monitoring Process	Goal
Kick-Off Meeting	Introduction on the overall operation of the librarian learning community and formulation of team-specific activity plans.
Interim Consulting	Listening to operational challenges and confirming support needs (Note: No interim consulting for autonomous design category)
Final Performance Sharing Session	Sharing and discussing the results of the librarian learning community operation

As the librarian learning community operates differently from traditional formal education methods, it is crucial to use the kick-off meeting to foster an understanding of the essence of collaborative self-directed learning within the librarian learning community and to provide an opportunity to articulate the purpose and detailed learning plans for upcoming team activities. In the interim consulting stage, participants in the librarian learning community identify potential issues that may arise during their self-directed learning process. This serves as a platform for discussing additional support, such as expert lectures and making adjustments to specific learning plans, potential requests for changes, including modifications agreed upon among participants. However, for the autonomous design category, since the learning design is completed when recruiting participants for the librarian learning community, no interim consulting was conducted.

There is a need to share and disseminate practical outcomes generated during the librarian learning community process and conduct a final performance sharing session for the smooth operation of future librarian learning communities. The primary purpose of the final performance sharing session is to not only share the activities of each community but also to identify the strengths, operational challenges, and areas for improvement in librarian learning community activities.

3.4 Analysis of the Effectiveness Diagnosis of the Librarian Learning Communities

In this study, to validate the established hypotheses, the collected questionnaires underwent statistical processing with data coding, followed by empirical analysis using the SPSS (Statistical Package for Social Science) 22.0 Korean version program as illustrated below.

First, to analyze the demographic characteristics and general features of the survey respondents, frequency analysis was conducted.

Second, descriptive analysis was performed to assess the normality of the measurement tools.

Third, reliability analysis was conducted to verify the internal consistency of the measurement variables.

Fourth, bivariate correlation analysis was conducted to understand the relationships between the measurement variables.

Fifth, independent sample t-tests were conducted to identify differences between pre- and post-measurements. The statistical significance level used in this study was set at $p < 0.05$.

4. Analysis Results of the Effectiveness of the Librarian Learning Community Operation

This study aimed to propose an approach involving the integration of a workplace learning organization known as the 'Librarian Learning Community,' characterized by an informal learning model and focused on information sharing and collaboration among library staff, with librarian education and training. The study operated a librarian learning community program, diagnosed its effectiveness, and intended to suggest improvement directions based on the results.

4.1 Demographic Characteristics

The survey was conducted with a total of 53 responses, comprising 28 pre-surveys (52.8%) and 25 post-surveys (47.2%). Detailed information is presented in <Table 1> below.

4.1.1 Age Analysis

Specifically, among the participants in the pre-survey, there were 6 males (21.4%) and 22 females (78.6%), while in the post-survey, there were 5 males (20.2%) and 20 females (80%).

In terms of age, the pre-survey distribution was 20s (25%), 30s (25%), 40s (28.6%), 50s (17.9%), and 60s and above (3.6%) compared to the post-survey distribution of 20s (20.2%), 30s, 40s (each 32.0%), 50s (12%), and 60s and above (4%).

4.1.2 Affiliation Analysis

In the survey regarding organizational affiliation, the pre-survey analysis showed 12 participants from public libraries (42.9%), 10 from university libraries (35.7%), and 6 from school libraries (21.4%). In the post-survey, the analysis indicated 10 participants from public libraries (40.1%), 9 from university libraries (36%), and 6 from school libraries (24%). Regarding the survey on regional affiliation, in the pre-survey, 6 participants were from the metropolitan area (22.2%), 2 from Chungcheong region (7.4%), 7 from Gangwon region (25.9%), 9 from Honam region (33.3%), and 3 from Gyeongsang region (11.1%). In the post-survey, 6 participants were from the metropolitan area (24%), 3 from Chungcheong region (12%), 6 from Gangwon region (24%), 9 from Honam region (36%), and 3 from Gyeongsang region (12%).

4.1.3 Participated Operation Model Analysis

The analysis of the operating models participated during the pilot librarian learning community operation showed that, in the pre-survey, 8 people (28.6%) participated in expert mentoring, 4 (14.3%) in semi-autonomous design (library marketing and promotion), 4 (14.3%) in semi-autonomous design (library community services), 6 (21.4%) in autonomous design (development of librarian programs using Edu Tech), and 6 (21.4%) in autonomous design (Ask a Librarian using ChatGPT). Similarly, in the post-survey, 6 people (24%) participated in expert mentoring, 5 (20%) in semi-autonomous design (library marketing and promotion), 4 (16%) in semi-autonomous design (library community services) and 10 (40%) participated in autonomous design (Ask a Librarian using ChatGPT).

Table 9. Demographic Analysis

Category		Classification	
		Pre	Post
Gender	Male	6 (21.4%)	5 (20.2%)
	Female	22 (78.6%)	20 (80.0%)
Age	20's	7 (25.0%)	5 (20.2%)
	30's	7 (25.0%)	8 (32.0%)
	40's	8 (28.6%)	8 (32.0%)
	50's	5 (17.9%)	3 (12.0%)
	60 or above	1 (3.6%)	1 (4.0%)
Affiliation	Public Library	12 (42.9%)	10 (40.1%)
	University Library	10 (35.7%)	9 (36.0%)
	School Library	6 (21.4%)	6 (24.0%)
Region	Metropolitan Area	6 (22.2%)	4 (16.0%)
	Chungcheong	2 (7.4%)	3 (12.0%)
	Gangwon	7 (25.9%)	6 (24.0%)
	Honam	9 (33.3%)	9 (36.0%)
	Gyeongsang	3 (11.1%)	3 (12.0%)
Operating Model	Expert Mentoring	8 (28.6%)	6 (24.0%)
	Semi-autonomous Design (Library Marketing and Promotion)	4 (14.3%)	5 (20.0%)
	Semi-autonomous Design (Library Community Services)	4 (14.3%)	4 (16.0%)
	Autonomous Design (Development of Librarian Programs Using EduTech)	6 (21.4%)	0 (0%)
	Autonomous Design (Ask a Librarian Using ChatGPT)	6 (21.4%)	10 (40.0%)

4.2 Effectiveness Diagnosis of the Librarian Learning Community

To assess the effectiveness of the librarian learning community, a post-evaluation was conducted among the participants in this study. The results of descriptive statistics, including items related to growth and learning promotion, collaborative culture, group inquiry, and practice and continuous efforts, are as follows.

Firstly, in terms of items related to growth and learning promotion, the results of the analysis revealed that librarians have the highest degree of perception of values related to users' information utilization and growth. The specific ratings for the items were as follows: 'Librarians share a vision and values aiming at the growth and enhancement of information utilization for users.' $4.48 \pm .51$, 'Librarians value user's information use and growth.' $4.56 \pm .51$, 'Librarians provide necessary time and support to users experiencing difficulties in information use' $4.48 \pm .59$, and 'Librarians strive for users' holistic growth.' $4.28 \pm .79$.

Table 10. Growth and Learning Promotion

Growth and Learning Promotion Items	M±SD
Librarians share a vision and values aiming at the growth and enhancement of information utilization for users	4.48±.51
Librarians value users' information use and growth.	4.56±.51
Librarians provide necessary time and support to users experiencing difficulties in information use.	4.48±.59
Librarians strive for users' holistic growth	4.28±.79
	4.45

The results for items related to collaborative culture are as follows: 'Librarians collaborate for service improvement' scored 4.40±.65, 'Librarians seek advice or assistance from each other' scored 4.48±.59, 'Librarians share methods for users' information use education' scored 4.44±.58, and 'Librarians form respectful and collaborative relationships with each other.' scored 4.28±.74. Among these, the collaborative culture that scored the highest perception level was the aspect of librarians listening to each other's advice or seeking help. On the contrary, the aspect of forming a relationship of mutual respect and collaboration showed the lowest degree of perception.

Table 11. Collaborative Culture

Collaborative Culture Items	M±SD
Librarians collaborate for service improvement.	4.40±.65
Librarians seek advice or assistance from each other.	4.48±.59
Librarians share methods for users' information use education.	4.44±.58
Librarians form respectful and collaborative relationships with each other.	4.28±.74
	4.40

The analysis results for the six items related to group inquiry, presented in <Table 12> are as follows: 'Librarians explore together for professional development' scored 4.48±.65, 'Librarians develop information use strategies with colleagues' scored 4.44±.65, 'Librarians engage in team learning activities for new information use techniques and applications' scored 4.44±.65, 'Librarians jointly research methods for users' information use education and growth' scored 4.40±.82, 'Librarians make decisions on information use activities based on data and related information' scored 4.20±.71, and 'Librarians jointly devise methods for users' information use guidance' scored 4.40±.65.

In other words, among the items related to group inquiry, the item that showed the highest degree of perception among librarians was collaborative exploration with fellow librarians for professional development, while the item related to basing information utilization activities on data and relevant information was perceived the lowest.

Table 12. Group Inquiry

Group Inquiry Items	M±SD
Librarians explore together for professional development.	4.48±.65
Librarians develop information use strategies with colleagues.	4.44±.65
Librarians engage in team learning activities for new information use techniques and applications.	4.44±.65
Librarians jointly research methods for users' information use education and growth.	4.40±.82
Librarians make decisions on information use activities based on data and related information.	4.20±.71
Librarians jointly devise methods for users' information use guidance.	4.40±.65
	4.39

The analysis results for items related to practice and continuous efforts are presented in <Table 13>. Specifically, 'Librarians apply what they learn in the learning community to library services' scored 4.24±.60, 'Librarians accept and apply feedback on information use and service issues from each other' scored 4.28±.89, 'Librarians apply suitable teaching methods to educate for information utilization skill improvement' scored 4.20±.82, 'Librarians make various attempts for users' growth and improved information utilization skills' scored 4.40±.65, 'Librarians diagnose overall learning community activities based on users' growth and improvement in information utilization abilities' scored 4.20±.65, 'Librarians develop service improvement measures in the learning community based on users' performance outcomes' scored 4.24±.66, 'Librarians participate in continuous discussions and debates for users' growth and information utilization enhancement' scored 4.20±.76, 'Librarians check and improve users' growth and information use status.' scored 4.16±.69, 'Librarians continuously monitor the institution's goal achievement based on users' performance outcomes' scored 4.08±.76, 'Librarians make continuous efforts to reflect on the direction of the learning community' scored 4.28±.68.

In other words, among the items related to practice and continuous efforts in this study, the item that showed the highest degree of perception among the librarians was diverse attempts for the growth and improvement of users' information utilization. Following that, efforts to accept feedback on information utilization and service issues among peers and continuous efforts to contemplate the direction of the learning community were identified. On the contrary, the item related to monitoring the achievement of organizational goals based on user performance results was perceived with the lowest level of awareness among other items of practice and continuous efforts.

Table 13. Practice and Continuous Efforts

Practice and Continuous Efforts Items	M±SD
Librarians apply what they learn in the learning community to library services.	4.24±.60
Librarians accept and apply feedback on information use and service issues from each other.	4.28±.89
Librarians apply suitable teaching methods to educate users for information utilization skill improvement.	4.20±.82
Librarians make various attempts for users' growth and information utilization enhancement.	4.40±.65
Librarians diagnose overall learning community activities based on users' growth and improvement in information utilization abilities.	4.20±.65
Librarians develop service improvement measures in the learning community based on users' performance outcomes.	4.24±.66
Librarians participate in continuous discussions and debates for users' growth and information utilization enhancement.	4.20±.76
Librarians check and improve users' growth and information use status.	4.16±.69
Librarians continuously monitor the institution's goal achievement based on users' performance outcomes	4.08±.76
Librarians make continuous efforts to reflect on the direction of the learning community.	4.28±.68
	4.23

4.3 Competency Diagnosis Analysis Results

4.3.1 Competency Analysis

The purpose of this study is to conduct a competency diagnosis of the librarian learning community. For this, the competency diagnosis is divided into three main areas: knowledge, skills, and attitudes. Among them, skills consist of collaboration skills, interpersonal skills, and problem-solving skills, while attitudes are composed of dedication, unity, multicultural acceptance, and fairness.

Examining the results of descriptive statistical analysis, knowledge scored 3.99, collaboration skills 4.13, interpersonal skills 3.81, and problem-solving skills 3.75, with an overall score of 3.89 for skill. That is, in terms of skills, collaboration skills demonstrated the highest competency.

In attitudes, dedication scored 4.16, unity 3.78, multicultural acceptance 4.08, and fairness 4.03, with an overall attitude score of 4.01. Dedication competency was the highest in the attitude domain.

4.3.2 Skewness and Kurtosis Analysis

Additionally, skewness and kurtosis analyses were conducted on the data used in this study. Skewness indicates the degree to which the distribution of the data is tilted in one direction, and generally, an absolute skewness value greater than 1 is considered significantly deviating from a normal distribution (Seong et al., 2011). Kurtosis represents the degree of peakedness in the distribution, and an absolute kurtosis value less than 7 is considered to indicate a normal distribution (Curran P. J. et al., 1996).

Based on these criteria, the skewness and kurtosis of the data used in this study all meet the standards, confirming the assumption of a normal distribution.

Table 14. Descriptive Statistical Analysis

Variable	Min	Max	Avg	SD	Skewness	Kurtosis
Knowledge	2.60	5.00	3.99	.51	-.10	.90
Collaboration Skill	3.00	5.00	4.13	.60	.07	-.76
Interpersonal Skill	2.60	5.00	3.81	.58	.13	-.34
Problem-solving Skill	2.00	5.00	3.75	.68	-.44	.62
Skill	2.73	5.00	3.89	.55	-.14	-.05
Dedication	3.00	5.00	4.16	.49	.00	-.33
Unity	2.50	5.00	3.78	.61	.10	-.30
Multicultural Acceptance	2.67	5.00	4.08	.61	-.54	.36
Fairness	2.67	5.00	4.03	.62	-.34	-.55
Attitude	3.00	5.00	4.01	.48	.17	-.26

4.4 Reliability Analysis

A reliability analysis was conducted on the variables selected in this study. Reliability refers to the dispersion of measurement values that appear when the same concept is measured repeatedly. In this study, Cronbach's Alpha coefficient was used to measure reliability and assess internal consistency.

Nunnally (1978) suggests that, in the context of exploratory research, a Cronbach's Alpha value of 0.60 or higher is considered sufficient. For basic research, a recommended threshold is 0.80 or higher, and in applied research where critical decisions are involved, the suggested threshold is 0.90 or higher.

In addition, according to Van et al. (1980), when examining the reliability of a measurement tool at the organizational level of analysis, an alpha value of 0.60 or higher is considered sufficient, indicating no significant issues with the reliability. In the specific analysis of the knowledge variable, which comprises five items, the Cronbach's Alpha was calculated to be 0.805, reinforcing the reliability of the measurement.

Next, the reliability of the sub-factors within the skill domain was assessed. The Cronbach's Alpha for collaboration skills was .913, for interpersonal skills was .775, and for problem-solving skills was .767. The overall Cronbach's Alpha for the 12 items in the skill was .916.

Examining the reliability analysis results for attitudes, the Cronbach's Alpha for dedication was .885, for unity was .796, for multicultural acceptance was .816, and for fairness was .738. The overall Cronbach's Alpha for attitudes was .922, indicating that the reliability of the measurement tools used in this study was considered to be sufficiently secured.

Table 15. Reliability Analysis Results

Variable	# of Questions	Reliability
Knowledge	5	.805
Collaboration Skill	5	.913
Interpersonal Skill	5	.775
Problem-solving Skill	2	.767
Skill	12	.916
Dedication	7	.885
Unity	4	.796
Multicultural Acceptance	3	.816
Fairness	3	.738
Attitude	17	.922

4.5 Correlation Analysis

To understand the relationships between knowledge, skills, and attitudes, a bivariate correlation analysis was conducted. Upon examining the detailed results, it was found that knowledge show the strongest positive correlation with skills at .720 ($p < .01$), indicating a statistically significant relationship. Additionally, it had notable positive correlations with other variables, such as interpersonal relationships (.671, $p < .01$), collaboration skills (.620, $p < .01$), problem-solving skills (.619, $p < .01$), and multicultural acceptance (.588, $p < .01$).

Collaboration skills showed the highest positive correlation with skill at .848 ($p < .01$), and also exhibited significant correlations with multicultural acceptance (.726, $p < .01$), interpersonal relationships (.702, $p < .01$), and attitudes (.690, $p < .01$).

In the correlation analysis for interpersonal relationship skills, the highest positive correlation was observed with skill at .921 ($p < .01$), followed by significant correlations with problem-solving skills (.760, $p < .01$), attitudes (.663, $p < .01$), and unity (.643, $p < .01$).

In the correlation analysis for problem-solving skills the highest positive correlation was observed with skill at .890 ($p < .01$), followed by unity (.653, $p < .01$), attitudes (.647, $p < .01$), and multicultural acceptance (.580, $p < .01$). Skill showed high correlations with attitudes (.756, $p < .01$), multicultural acceptance (.728, $p < .01$), and unity (.686, $p < .01$).

In the correlation analysis for dedication, high correlations were observed with attitudes (.838, $p < .01$), unity (.687, $p < .01$), and fairness (.632, $p < .01$). Unity showed high correlations with attitudes (.816, $p < .01$), multicultural acceptance (.822, $p < .01$), and fairness (.853, $p < .01$).

The analysis results indicate that there are statistically significant and strong correlations among the variables of knowledge, skills, and attitudes.

Table 16. Correlation Analysis

Variable	Knowledge	Collaboration Skill	Interpersonal Skill	Problem-solving Skill	Skill	Dedication	Unity	Multicultural Acceptance	Fairness	Attitude
Knowledge	1									
Collaboration Skill	.620**	1								
Interpersonal Skill	.671**	.702**	1							
Problem-solving Skill	.619**	.550**	.760**	1						
Skill	.720**	.848**	.921**	.890**	1					
Dedication	.467**	.543**	.532**	.493**	.593**	1				
Unity	.545**	.494**	.643**	.653**	.686**	.687**	1			
Multicultural Acceptance	.588**	.726**	.619**	.580**	.728**	.534**	.511**	1		
Fairness	.523**	.529**	.421**	.421**	.515**	.632**	.524**	.661**	1	
Attitude	.641**	.690**	.663**	.647**	.756**	.838**	.816**	.822**	.853**	1

** p<.01

4.6 Diffidence Analysis

To analyze the differences between the participants in this study before and after the intervention, independent sample t-tests were conducted, and the results are as follows.

4.6.1 Analysis of Differences Before and After Intervention Based on Knowledge

The difference analysis of pre and post intervention based on knowledge competency showed that the post-intervention mean (4.02±.55) is higher than the pre-intervention mean (3.96±.48) with t=-.485, p=.637.

Table 17. Analysis of Differences Before and After Intervention Based on Knowledge Competency

Variable	Classification	N	AVG	SD	t	p
Knowledge	Pre	28	3.96	.48	-.475	.637
	Post	25	4.02	.55		

* p<.05, ** p<.01

4.6.2 Analysis of Differences Before and After Intervention Based on Skill Competency

The analysis result of the t-test comparing the pre-intervention and post-intervention scores for functional competency is presented in <Table 5>. Specifically, for collaboration skill, the mean scores were 4.03±.57 in the pre-intervention phase and 4.25±.63 in the post-intervention phase, indicating an increase of .22 (t=-1.331, p=.189).

For interpersonal skill, the pre-intervention mean score was $3.74 \pm .55$, and the post-intervention mean score was $3.87 \pm .62$. The post-intervention mean score was .15 higher than the pre-intervention mean, indicating a slight increase in the post-intervention phase ($t = -.914$, $p = .365$).

Regarding the analysis of problem-solving skill, the pre-intervention mean score was $3.63 \pm .74$, and the post-intervention mean score was $3.88 \pm .58$. The post-intervention mean score showed a higher increase, demonstrating the effectiveness of post-intervention problem-solving competence ($t = -1.381$, $p = .173$).

In the analysis of the overall skill, including collaboration skill, interpersonal skill, and problem-solving skill, the pre-intervention mean score was $3.79 \pm .56$ and the post-intervention mean score was $4.01 \pm .53$, showed an increase of .22 ($t = -1.430$, $p = .159$).

According to the analysis results, the variable showing the highest difference between pre-intervention and post-intervention was interpersonal skill,, followed by problem-solving skill and collaboration skill.

Table 18. Analysis of Differences Before and After Intervention Based on Skill Competency

Variable	Classification	N	AVG	SD	t	p
Collaboration Skill	Pre	28	4.03	.57	-1.331	.189
	Post	25	4.25	.63		
Interpersonal Skill	Pre	26	3.74	.55	-.914	.365
	Post	25	3.89	.62		
Problem-solving Skill	Pre	28	3.63	.74	-1.381	.173
	Post	25	3.88	.58		
Skill	Pre	26	3.79	.56	-1.430	.159
	Post	25	4.01	.53		

* $p < .05$, ** $p < .01$

4.6.3 Analysis of Differences Before and After Intervention Based on Attitude Competency

The results of the pre- and post-intervention difference analysis based on attitude competency are as follows. In the analysis of dedication, the pre-intervention mean was $4.13 \pm .48$, and the post-intervention mean was $4.19 \pm .50$, showing that the post-intervention mean is higher than the pre-intervention mean ($t = -.415$, $p = .680$). For unity, the pre-intervention mean was $3.71 \pm .64$, and the post-intervention mean was $3.85 \pm .57$, indicating an increase in the post-intervention mean and a higher Unity after the intervention ($t = -.806$, $p = .424$).

The analysis of multicultural acceptance revealed a unique characteristic compared to other analyses, showing a decrease in multicultural acceptance from pre-intervention ($4.10 \pm .64$) to post-intervention ($4.07 \pm .59$) ($t = .169$, $p = .867$).

In the analysis of fairness, the pre-intervention mean was $4.01 \pm .69$, and the post-intervention mean was $4.05 \pm .55$, showing a slightly higher post-intervention mean ($t = -.239$, $p = .812$).

For attitude, which includes dedication, unity, multicultural acceptance, and fairness, the pre-intervention mean was $3.99 \pm .51$, and the post-intervention mean was $4.04 \pm .46$, showing a mean increase

of .05 in the post-intervention compared to the pre-intervention ($t=-.380$, $p=.705$).

5. Conclusion and Recommendations

In this study, we conducted a pilot operation of collaborative librarian learning communities and aimed to measure the improvement of the community capacity of the librarian learning communities. A total of 28 participants took part in four community groups. Based on a community capacity scale developed in prior research, the study sought to measure the performance of the librarian learning community operation by assessing the capacity improvement. And the research results are as follows.

First, for the effectiveness diagnosis of the librarian learning communities, a post-evaluation of the librarian learning community operation was conducted, evaluating aspects such as growth and learning promotion, collaborative culture, group inquiry, and practice and continuous efforts. The results indicated that the highest ratings were in the areas of growth and learning promotion, followed by collaborative culture, group inquiry, and practice and continuous efforts. Importantly, all specific items within each area received ratings of 4 or higher, suggesting that the participation of librarians in the collaborative learning community can be valuable for individuals, organizations, and users.

Second, regarding the characteristics of participants and the operating model they engaged in, an examination of demographic features revealed a higher proportion of female participants, with a higher participation rate in the 30-40 age group. Participants were predominantly affiliated with public libraries, and there was a notable high participation rate from the Honam region. Looking at the engaged operating models, it was observed that participation in librarian programs utilizing EduTech was initially high but later resulted in zero responses, indicating a need for a root cause analysis. In other words, a thorough analysis is required to determine whether the post-participation absence is due to operational issues, issues with self-designed programs, or issues related to the program's theme.

Third, regarding community capacity and the correlation analysis between competencies, when analyzing the competencies of knowledge, skills, and attitude within community competencies, attitude competency was found to be the highest, followed by knowledge and skills in the given order. In the analysis of the correlation between competencies, it was evident that there are mutual correlations among the three competencies. This implies that a person with a positive attitude may also have high skills and knowledge.

Fourth, in the analysis of competency differences, in the pre/post-analysis of knowledge competency, it was confirmed that knowledge competency improved after the collaborative learning community activity compared to before. This indicates that the collaborative learning community can contribute to enhancing librarians' knowledge competencies. In the pre/post-analysis of skill competency, when looking at the average skill competency, it was observed that skill competency improved after the collaborative learning community activity. Among the sub-competencies, interpersonal skill, problem-solving skill, and collaboration ability all showed improvement, in the given order. In the pre/post-analysis of attitude competency, when examining the average attitude competency, it was

found that attitude competency improved after the collaborative learning community activity. Looking at the sub-competencies, improvements were observed in the order of multicultural acceptance, fairness, dedication, and unity.

Through this research, it was evident that librarians can significantly enhance their knowledge, skills, and attitudes by actively engaging in librarian learning communities where they collaborate with other librarians who share common interests. Essentially, the operation of a librarian learning community has the potential to elevate the overall competency of librarians and can directly contribute to strengthening the service capabilities of the library. However, considering the variations in participation rates based on different topics, a thorough diagnostic analysis is deemed essential for the successful operation of librarian learning communities. It seems necessary to discover and apply improvements based on continuous operation and performance analysis in the future.

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