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## **Empowering BCC Spirit Traits and Good Student Qualities by Using LINE Front-end Framework (LIFF) Application: A Case Study of Bangkok Christian College**

Wichai Srisud<sup>1</sup>

Thaworn Intaraamorn<sup>2\*</sup>

Eknarin Bangthamai<sup>3</sup>

<sup>1</sup>Deputy Director of Bangkok Christian College, Bangkok, Thailand

<sup>2</sup>Department of Educational Policy, Management, and Leadership  
Faculty of Education

Chulalongkorn University, Bangkok, Thailand

<sup>3</sup>Department of Educational Technology  
Faculty of Education

Silpakorn University, Bangkok, Thailand

\*Corresponding author

<sup>2</sup>Email: thawornmds@gmail.com

### **Abstract**

This study explores the empowerment of four BCC spirit traits—Loyalty, Honesty, Responsibility, and Unity—and six good student qualities, including Public-mindedness, Discipline, Politeness, Love of Learning, Appreciation of Thai Culture, and Environmental Awareness, through the application of the LINE Front-end Framework (LIFF) at Bangkok Christian College. The research aims to evaluate users' satisfaction with the application of LIFF to enhance the BCC spirit traits and good student qualities at Bangkok Christian College. The study used a mixed-methods approach to gather quantitative and qualitative data on user satisfaction and the impact of the application on primary students' characteristic development. The obtained results indicate a significant enhancement in the targeted spirit traits and student qualities, as reported by students, teachers, and parents. The findings underscore the application's effectiveness in promoting engagement, communication, and values-based learning. This research concludes that the integration of the LIFF application serves as a valuable resource in cultivating a positive school culture and nurturing future leaders with strong moral and ethical foundations. Recommendations for future research and potential expansions of this technological initiative in educational settings are also provided.

**Keyword:** *BCC spirit traits, good student qualities, LINE Front-end Framework (LIFF), Bangkok Christian College*

### **1. Introduction**

The outbreak of the COVID-19 virus has significantly impacted classroom learning, prompting educational reform (Marketing Oops, 2020). UNESCO has estimated that over 363 million learners worldwide are affected by the COVID-19 crisis, with educational institutions in 15 countries across the Middle East, Europe, and North America closing their doors. In response, many schools and universities have adopted various technologies to facilitate online learning, with China being the first country to announce a halt to in-person classes. This shift forced both teachers and students to transition to online curricula. In the United States, schools began closing to prevent the spread of the virus, with top institutions like Harvard University

announcing a move to virtual education on March 23, 2020. Similarly, Princeton, Stanford, and many other leading universities in the U.S. were prepared to implement online learning to allow students to study remotely.

In Thailand, many schools quickly announced online learning methods once the COVID-19 crisis emerged, impacting all sectors, particularly education. While the pandemic has posed challenges, it has also accelerated the global educational reform movement, particularly in integrating technology into the learning system, allowing education to continue seamlessly regardless of location (Panpeng, 2022; Ratchavieng & Phakamach, 2024; Santhuenkaew, Jaikaew & Athikiat, 2024). Using chatbots for online teaching has emerged as an effective alternative, enabling various interactive learning formats. Teachers can use chatbots to respond directly to student inquiries, send questions or quizzes, and monitor student progress. An illustrative application is LINE, a messaging platform that facilitates chatbot development to enhance communication (LINE Developer, n.d.). In 2021, statistics showed that Thais spend approximately 216 minutes daily on social media, with LINE users dedicating an average of 67 minutes. The significant number of LINE users underscores its potential as an educational tool, making it an attractive platform for implementing chatbots, which strengthen connections between teachers, students, and parents (Ruttanapan & Saiyaitong, 2023).

In creating "Brand Loyalty," businesses in Thailand today recognize that simply meeting customers' needs in terms of "Place," "Price," and "Product" is no longer sufficient. They must also emphasize "Promotion" or "sales promotion," which plays a crucial role in building brand attachment. Many businesses currently utilize various sales promotion techniques, such as discounts and giveaways; however, these strategies may only satisfy customer demands temporarily and are not effective in fostering strong "Brand Loyalty." Establishing a membership system through applications or LINE Official Accounts on LINE has emerged as an excellent alternative, allowing customers to register and access services easily and conveniently without redundant data entry. The LINE Front-end Framework (LIFF) is a key tool in creating "Brand Loyalty" through its In-App Website format, which enables customers to access the brand's webpage without the need to open a web browser, thereby reducing the gap between chatting in the app and accessing website information (Wong, Srisombat & Limpan, 2019). Furthermore, LINE LIFF allows for the seamless integration of existing LINE data, enabling brands to connect with customers easily and analyze data for further business development. Additionally, LINE LIFF supports the creation of a point accumulation and rewards redemption system within LINE Official Accounts, helping to build strong customer relationships and enhance sales promotions. LINE is also poised to play a key role in marketing communication, brand building, and driving various activities in the future (Ruttanapan & Saiyaitong, 2023).

Bangkok Christian College as the context of this research emphasizes the integration of technology to support education and the development of male students' characteristics to become gentlemen with the BCC spirit (Bangkok Christian College (2021). Its status as a private all-boys school crucially fosters positive traits and ethical behavior for the growth of its students. In addition to personal characteristics, Bangkok Christian College focuses on developing students' learning and athletic skills. The curriculum aligns closely with that of the Thai Ministry of Education, emphasizing the development of language, science, mathematics, and general cultural knowledge through practical teaching methods and experiential learning activities for students' development (Ministry of Education, 2011). Moreover, the identity of learners, embodied in the BCC Spirit, is a key characteristic valued by Bangkok Christian College. The school has implemented programs to promote the educational development of its students, particularly through the use of technology and communication to create modern and engaging learning experiences.

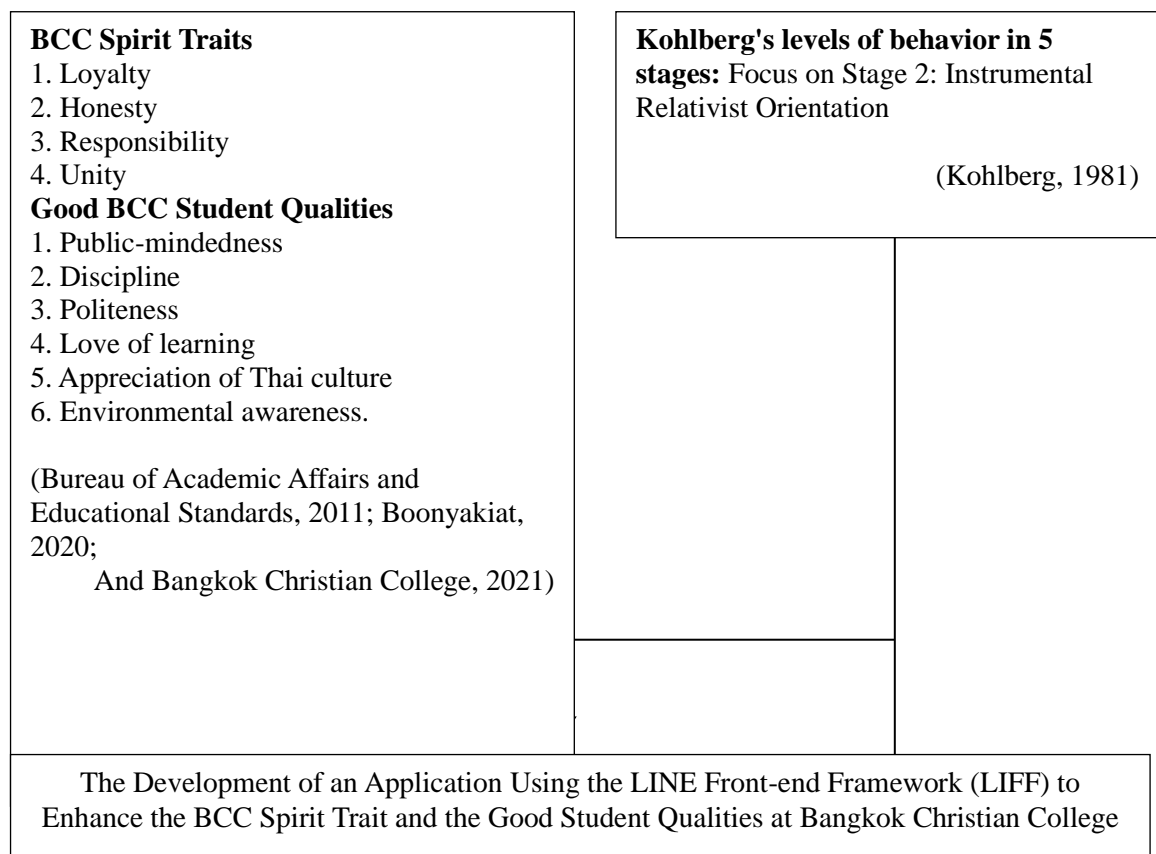
This technology- and communication-based program operates within the framework of

the Ministry of Education's curriculum and co-operative education, emphasizing self-understanding of content, leadership, and creativity among students. Importantly, the initiative prioritizes the development of integrated learning skills, utilizing technology to support and enhance students' capabilities across various areas. This program is one of many that Bangkok Christian College has implemented to ensure that students' learning experiences are relevant and effective in meeting the needs of contemporary learners. Given these considerations, there is an urgent need for research-based studies to develop and evaluate the application of the LINE Front-end Framework (LIFF) that aims to promote the BCC spirit attributes among primary students of Bangkok Christian College, particularly starting from the time of the COVID-19 pandemic.

## 2. Research Conceptual Framework

The researchers established a conceptual framework for the research by adopting BCC spirit traits (Loyalty, Honesty, Responsibility, and Unity) and good BCC student qualities (Public-mindedness, Discipline, Politeness, Love of learning, Appreciation of Thai culture, and Environmental awareness) according to the guidelines of Bureau of Academic Affairs and Educational Standards (2011); Boonyakiat, (2020); and Bangkok Christian College (2021). By these principles, the researchers aimed at Kohlberg's levels of behavior in five stages, particularly with a focus on Stage 2: instrumental relativist orientation (Kohlberg, 1981). The conceptual research framework is shown in Figure 1.

**Figure 1:** Conceptual Research Framework



### 3. Research Objectives

There were two objectives in this research:

(1) To develop an application using the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities at Bangkok Christian College.

(2) To evaluate primary-student users' satisfaction with the application of the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities at Bangkok Christian College.

### 4. Research Methodology

This study was quantitative in nature with descriptive research methods. The researchers developed an application using the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities at Bangkok Christian College. Users' satisfaction with the application of the LINE Front-end Framework (LIFF) was evaluated regarding the extent to which the platform could enhance the BCC spirit traits and good student qualities at the college under study.

#### 4.1 The Respondents

The population of this study was 2,611 primary students at Bangkok Christian College. At least 335 primary students were needed to be a part of the study, using Krejcie and Morgan Table (1970) with an error of 5 percent. A sample of 335 primary students were selected with their parents on a voluntary basis. The researchers also obtained feedback from administrators, teachers, and parents.

#### 4.2 Research Instrument

The researchers used two questionnaires addressing (i) the factors affecting the respondents' use of the application and (ii) their satisfaction with the use of the Line Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities.

The first questionnaire was in 2 sections: Section 1: demographic information of the respondents with 4 checklist items. The respondents were asked for gender, age, education level, current position; Section 2: the factors affecting the use of the LINE Front-End Framework (LIFF) to enhance the BCC spirit traits and good student qualities in 11 multiple choice items.

The second questionnaire was also in two parts evaluating the respondents' satisfaction with the use of the LINE Front-End Framework (LIFF) to enhance the BCC-spirit traits and good student qualities. Similarly, in Section 1, the respondents were asked for data on gender, age, education level, and current position. In Section 2, the respondents were to respond to 21 items on a 5-point rating scale regarding their satisfaction with the extent to which the LINE Front-End Framework (LIFF) could enhance the BCC spirit traits and good student qualities.

As for the instruments' validity and reliability, three content LIFF experts checked the questionnaire items for Item Objective Congruence (IOC) Index for content validity. Items with the IOC index above 0.5 were regarded as good and valid. Cronbach's alpha co-efficient equal to 0.966 was used for the reliability of the questionnaires at a very good level.

#### 4.3 Data Collection and Analysis

The researchers informed the participating students under study and asked them to bring letters of consent to their parents for both permission and participation of requested data providers. The data collection period in 2024 was arranged for all participants—students, parents, teachers, and administrators.

All collected data from both questionnaires were analyzed for frequency, percentage, mean, and standard deviation.

### 5. Research Results

The demographic analysis revealed that 457 individuals participated (335 students and 122 parents/ teachers/ administrators), including 376 males (82.28%), 75 females

(16.41%), and 6 individuals who did not specify their gender (1.31%). Most respondents, 360 (78.77%), were students, with 145 (40.28%) in primary 5. Additionally, 61 participants (73.49%) were mothers.

The analysis also highlighted the factors, the application development, and users' satisfaction with the LINE Front-end Framework (LIFF) to enhance BCC spirit traits and good student qualities.

### 5.1 The Factors Affecting the Use of the LINE Front-end Framework (LIFF) to Enhance the BCC Spirit Traits and Good Student Qualities

**Table 1:** Factors Affecting the Use of the LINE Front-end Framework (LIFF) to Enhance BCC Spirit Traits and Good Student Qualities

Factor	M	SD	Level
<b>1. The reliability of the LINE application</b>	<b>4.06</b>	<b>0.94</b>	<b>High</b>
2. The appealing design of the LINE application	3.83	0.97	High
<b>3. Convenience and speed of use</b>	<b>4.27</b>	<b>0.93</b>	<b>High</b>
4. Recommendations from teachers/parents to try it	3.86	1.16	High
5. Recommendations from friends to try it	3.67	1.21	High
6. Personal belief in promoting BCC spirit traits by awarding points through the LINE application	3.66	1.16	High
7. Personal belief in promoting BCC spirit traits by redeeming rewards through the LINE application	3.66	1.16	High
<b>8. Personal belief in the ability to communicate and express opinions with classmates/teachers through the LINE application</b>	<b>4.07</b>	<b>1.05</b>	<b>High</b>
9. Personal belief in the ability to share information, scores, or results with friends, acquaintances, or the public through the LINE application	3.82	1.12	High
10. The LINE application having a point accumulation function for redeeming rewards	3.67	1.15	High
11. The LINE application having a reward redemption function	3.65	1.19	High
<b>Total</b>	<b>3.84</b>	<b>1.12</b>	<b>High</b>

Table 1 shows that the factors affecting the use of the LINE Front-end Framework (LIFF) to enhance BCC spirit traits and good student qualities were generally at a high level ( $M = 3.84$ ,  $S.D. = 1.12$ ). As for the individual aspects, the *convenience and speed* of using the LINE Front-end Framework (LIFF) was the factor with the highest average ( $M = 4.27$ ,  $S.D. = 0.93$ ), followed by

- *the personal belief* in the ability to *communicate* and express opinions with classmates/teachers through the LINE application ( $M = 4.07$ ,  $S.D. = 1.05$ ),
- *the reliability* of the LINE application ( $M = 4.06$ ,  $S.D. = 0.94$ ),
- *recommendations* from *teachers/parents* to try it ( $M = 3.86$ ,  $S.D. = 1.16$ ),
- *the appealing design* of the LINE application ( $M = 3.86$ ,  $S.D. = 0.97$ ),
- *personal belief* in the ability to *share* information, scores, or results with friends, acquaintances, or the public through the LINE application ( $M = 3.82$ ,  $S.D. = 1.12$ ),
- *recommendations* from *friends* to try it ( $M = 3.67$ ,  $S.D. = 1.21$ ),
- the LINE application having a *point accumulation* function for redeeming rewards ( $M = 3.67$ ,  $S.D. = 1.15$ ),
- *personal belief in promoting* BCC spirit traits by *awarding points* through the LINE application ( $M = 3.66$ ,  $S.D. = 1.16$ ),
- *personal belief in promoting* BCC spirit traits by *redeeming rewards* through the LINE application ( $M = 3.66$ ,  $S.D. = 1.16$ ), and

- the LINE application having a *reward redemption function* ( $M = 3.65$ ,  $S.D. = 1.19$ ).

## 5.2 Components of the LINE Front-end Framework (LIFF) to Enhance the BCC Spirit Traits and Good Student Qualities at Bangkok Christian College.

### 5.2.1 LINE Front-end Framework (LIFF) to Enhance the BCC Spirit Traits and the Good Student Qualities at Bangkok Christian College

LIFF consists of three main components:

1. *LINE Front-end Framework (LIFF)* includes a membership system, which features both automatic sign-up and sign-in through the LINE application, along with manual entry of membership information. The scoring system comprises four BCC Spirit traits: (i) Loyalty, (ii) Honesty, (iii) Responsibility, and (iv) Unity, and six qualities of a good BCC student qualities: (i) Public-mindedness, (ii) Discipline, (iii) Politeness, (iv) Love of learning, (v) Appreciation of Thai culture, and (vi) Environmental awareness. It includes an interface connecting administrators, teachers, students, and parents, allowing them to use the LINE application with the LIFF function to check evaluations, accumulate points, and redeem rewards.

2. *The management system* is used for handling evaluations, allowing for scoring individuals, entire classrooms, or grade levels, and keeping user history in the form of computer traffic data (Logfile).

3. *The database system* stores all information of the LINE Front-end Framework (LIFF) on the cloud. When updates are made in the admin backend management system, all users receive the latest information via the internet.

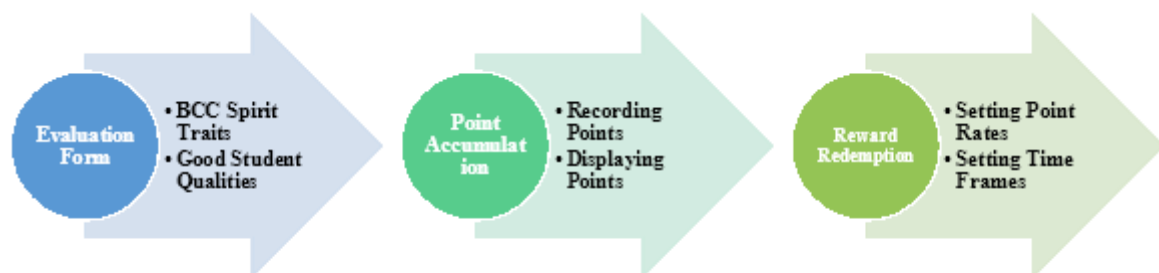
### 5.2.2 The Assessment of the BCC Spirit Traits and the Good Student Qualities at Bangkok Christian College

The assessment is divided into two parts:

1. *In-class*: This involves evaluating and scoring students based on specified attributes and qualities. Homeroom and subject teachers can evaluate and score every student in every class session. The scores obtained by the students can be used to enhance their attitude scores toward that subject.

2. *Outside the classroom*: This involves evaluating and scoring students based on observable behavior. All teachers can assess the students according to the specified attributes and qualities.

**Figure 2:** Prototype of the LINE Front-end Framework (LIFF) to Enhance BCC Spirit Traits and Good Student Qualities

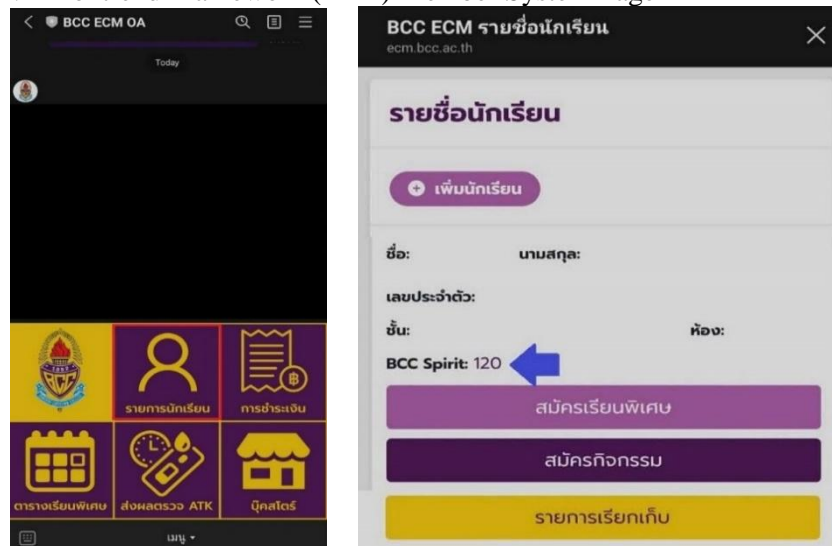


The evaluation results from three experts of the LINE Front-end Framework (LIFF) application, on enhancing BCC spirit traits and good student qualities, revealed that overall, it was at a very good level ( $M = 4.69$ ,  $S.D. = 0.35$ ). When considering individual aspects, each had scored 4.00 or above, which met the criteria for a good level of

evaluation and above. This means that the LINE Front-end Framework (LIFF) application was able to enhance BCC spirit traits and good student qualities.

***The LINE Front-end Framework (LIFF) Application to Enhance the BCC Spirit Traits and Good Student Qualities at Bangkok Christian College***

**Figure 3:** LINE Front-end Framework (LIFF) Member System Page

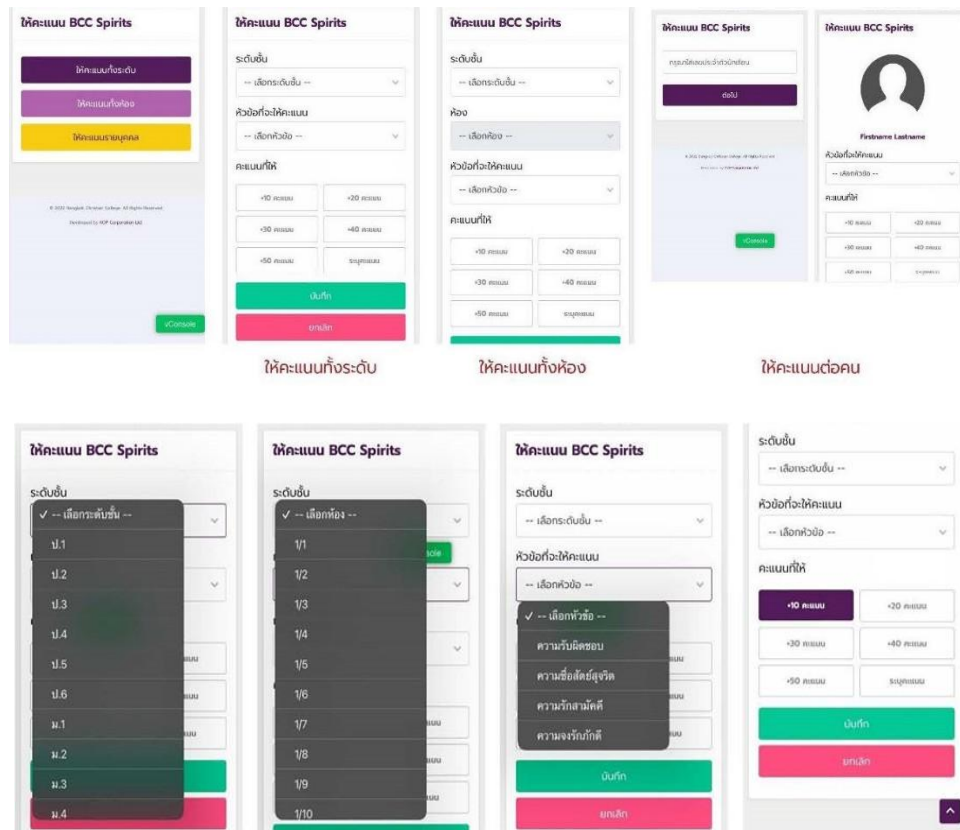


**Figure 4:** LINE Front-end Framework (LIFF) Homepage Layout



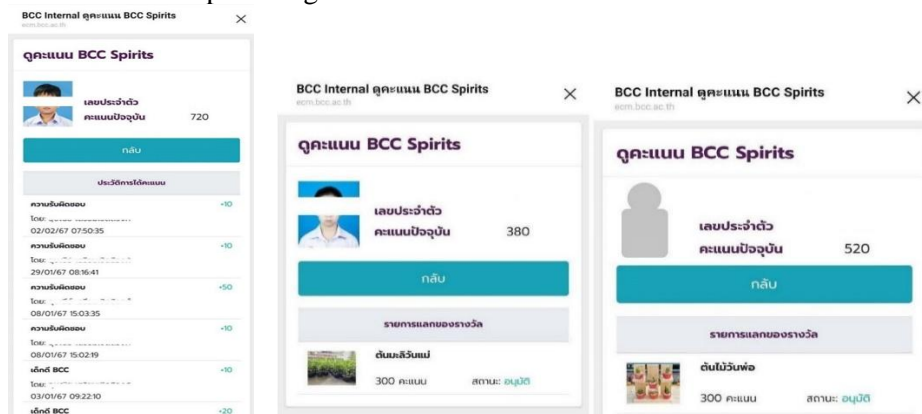
From this page, teachers can evaluate students and give scores to individuals, classes, and levels. Teachers can evaluate and give scores to everyone in every period based on their empirical behavior, BCC spirit traits and good student qualities.

**Figure 5:** LINE Front-end Framework (LIFF) Scoring Page Layout

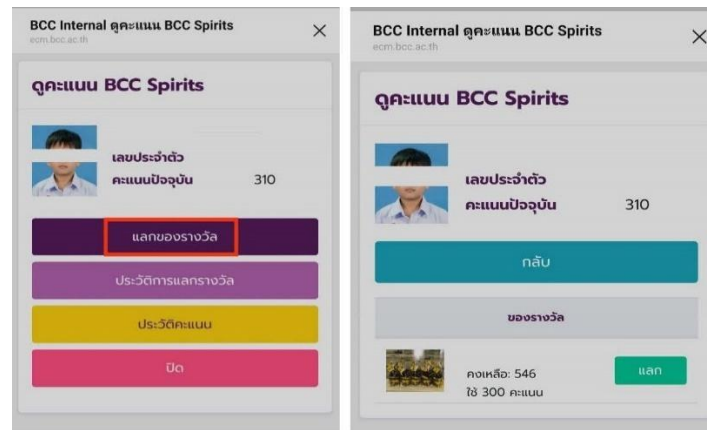


The students, parents, teachers, and administrators can view the score history through the LINE Front-end Framework (LIFF) application.

**Figure 6:** Outline of the LINE Front-end Framework (LIFF) – Score Viewing and Reward Redemption Page







### 5.3 The Satisfaction of the Respondents with the Use of the LINE Front-End Framework (LIFF) to Enhance the BCC Spirit Traits and Good Student Qualities

The second questionnaire yielded the results on the respondents' evaluation of their satisfaction with the use of LIFF, as shown in Tables 2 and 3.

**Table 2:** The Satisfaction of the Respondents with the Use of the LINE Front-end Framework (LIFF) to Enhance the BCC Spirit Traits and Good Student Qualities in Terms of Media

Satisfaction	M	SD	Level
1. The modernity and novelty of the technology	4.19	0.90	High
2. The appropriateness of the technology used for scoring	4.12	0.91	High
3. The appropriateness of the technology used for accumulating points	4.09	0.98	High
4. The appropriateness of the technology used for redeeming rewards	4.02	1.00	High
5. Convenience and ease of use	4.15	0.99	High
6. The appropriateness of the evaluation topics	4.00	0.94	High
<b>Total</b>	<b>4.09</b>	<b>0.96</b>	<b>High</b>

Table 2 reveals the overall satisfaction of the respondents with the use of the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities in term of Media as high ( $M = 4.09$ ,  $S.D. = 0.96$ ). As for each aspect, the *modernity and novelty* of the technology received the highest satisfaction ( $M = 4.19$ ,  $S.D. = 0.90$ ), followed by *convenience and ease of use* ( $M = 4.15$ ,  $S.D. = 0.99$ ), the appropriateness of the technology used for *scoring* ( $M = 4.12$ ,  $S.D. = 0.91$ ), the appropriateness of the technology used for *accumulating points* ( $M = 4.09$ ,  $S.D. = 0.98$ ), the appropriateness of the technology used for *redeeming rewards* ( $M = 4.02$ ,  $S.D. = 1.00$ ), and the appropriateness of the *evaluation topics* ( $M = 4.00$ ,  $S.D. = 0.94$ ), respectively.

**Table 3:** The Satisfaction of the Respondents with the Evaluation of BCC Spirit Traits and Good Student Qualities by Using the LINE Front-end Framework (LIFF)

Using LINE Front-end Framework (LIFF)	M	SD	Level
1. Help students perform tasks automatically.	3.96	1.02	High
2. Make assessments easier.	4.01	0.98	High
3. Simplify score entry.	3.98	0.98	High
4. Encourage greater loyalty in students.	3.83	1.05	High
5. Promote greater honesty among students.	3.90	1.01	High
6. Foster increased responsibility in students.	3.95	1.03	High

Using LINE Front-end Framework (LIFF)	M	SD	Level
7. Encourage greater unity among students.	3.89	1.08	High
8. Promote greater public-mindedness in students.	3.90	1.07	High
9. Enhance students' discipline.	3.98	1.05	High
10. Encourage greater politeness in students.	3.82	1.09	High
11. Encourage a greater love of learning in students.	3.89	1.06	High
12. Encourage students to appreciate Thai culture more.	3.79	1.13	High
13. Promote greater environmental awareness in students.	3.85	1.11	High
14. Simplify point accumulation.	4.07	0.99	High
15. Make redeeming rewards easier.	4.00	0.98	High
<b>Total</b>	<b>3.92</b>	<b>1.04</b>	<b>High</b>

Table 3 indicates the overall satisfaction of the respondents with the evaluation of BCC spirit traits and good student qualities by using the LINE Front-end Framework (LIFF) as high ( $M = 3.92$ ,  $S.D. = 1.04$ ). As for each aspect,

- Simplifying *point accumulation* ( $M = 4.07$ ,  $S.D. = 0.99$ ) ranked highest, followed by making *assessments* easier ( $M = 4.01$ ,  $S.D. = 0.98$ ),
- Making *redeeming rewards* easier ( $M = 4.00$ ,  $S.D. = 0.98$ ), enhancing students' *discipline* ( $M = 3.98$ ,  $S.D. = 0.98$ ),
- Simplifying *score entry* ( $M = 3.98$ ,  $S.D. = 0.98$ ), helping students *perform tasks* automatically ( $M = 3.96$ ,  $S.D. = 1.02$ ),
- Fostering increased *responsibility* in students ( $M = 3.95$ ,  $S.D. = 1.03$ ), promoting greater *honesty* among students ( $M = 3.90$ ,  $S.D. = 1.01$ ),
- Promoting greater *public-mindedness* in students ( $M = 3.90$ ,  $S.D. = 1.07$ ), encouraging *greater unity* among students ( $M = 3.89$ ,  $S.D. = 1.08$ ),
- Encouraging a greater *love of learning* in students ( $M = 3.89$ ,  $S.D. = 1.06$ ),
- Promoting greater *environmental awareness* in students ( $M = 3.85$ ,  $S.D. = 1.11$ ), encouraging greater *loyalty* in students ( $M = 3.83$ ,  $S.D. = 1.05$ ),
- Encouraging greater *politeness* in students ( $M = 3.82$ ,  $S.D. = 1.09$ ), and
- Encouraging students to appreciate *Thai culture* more ( $M = 3.79$ ,  $S.D. = 1.13$ ), respectively.

## 6. Conclusion and Discussion

### 6.1 Conclusion

The study developed the application using LINE Front-end Framework (LIFF) to enhance four BCC spirit traits and six good qualities of Bangkok Christian College students. The application of LIFF to promote BCC spirit traits and good student qualities of Bangkok Christian College students was evaluated at a high level. The factors of BCC spirit traits and the evaluation of the good qualities of students were also at a high level, making it suitable for actual data collection during trials and actual use by the respondents under study.

As for the effects of using LINE Front-end Framework (LIFF) on enhancing BCC spirit traits and the good qualities of students, the respondents--students, parents, teachers, and administrators using LIFF--reported a significantly higher level of satisfaction compared to pre-use at the .05 level. The results evidently support LIFF as shown in the students' high satisfaction with BCC spirit traits and the good student qualities of at the .05 significance level.

## 6.2 Discussion

In discussing the obtained results, the researchers addressed two research questions on (i) developing an application using the LINE Front-end Framework (LIFF) to enhance the BCC spirit traits and good student qualities at Bangkok Christian College, and (ii) evaluating users' satisfaction with LIFF to enhance the BCC spirit traits and good student qualities at Bangkok Christian College.

The components and processes of the application using the LINE Front-end Framework (LIFF) to promote the BCC spirit traits and good student qualities at Bangkok Christian College successfully met the evaluation criteria at a high level. This is consistent with the findings of the Bureau of Human Resources Management, Royal Irrigation Department (2022), which appraised the use of the Line Official Account: HR Rid as effectively supporting personnel evaluations within organizations, enhancing required qualities set by the organization, and providing evaluators with convenience, accurate information, and accessibility anytime, anywhere.

The obtained results reveal that students, parents, teachers, and administrators showed a statistically significant increase in satisfaction at the .05 level. This indicates that LINE can reduce communication barriers in organizations, support work, and improve communication effectiveness. Additionally, the findings of Mitsophonsiri, Thangsathityangkui & Ongsuwan (2020) showed that the use of the LINE application aids in management tasks by collecting data, disseminating information, and receiving reports of issues. As shown in the obtained findings, the LINE application is suitable for work according to the Task-Technology Fit (TIF) theory, which includes eight factors: (i) quality of information, (ii) access rights to information, (iii) ease of information search, (iv) information compatibility, (v) ease of use, (vi) user acceptance, (vii) system reliability, and (viii) user relationships.

## 7. Implications and Suggestions

The findings can suggest and generate some practical implications for other educational institutions, depending on the needs of their context.

In promoting *positive behaviors*, educational institutions should prioritize utilizing information technology to be accessible to both students and parents. The research found that 67.65% of the respondents or stakeholders at Bangkok Christian College use mobile phones with the IOS operating system to access various information. This enables the school to develop appropriate assessment details and choose channels for accumulating and exchanging rewards that align with the information technology usage of students, teachers, and parents at the school. Based on such information, using the LINE Front-end Framework (LIFF) is another channel that allows teachers to better connect with students and fellow teachers in promoting BCC spirit traits. According to the obtained results, love of learning and preservation of Thai culture had the highest priority index. Therefore, in promoting BCC spirit traits in and out of the classroom through information technology, *teachers should emphasize assessments* using the LINE Front-end Framework (LIFF) to encourage students to be responsible, love learning, and preserve Thainess, providing a path to develop BCC spirit traits further.

When using the LINE Front-end Framework (LIFF) to promote BCC spirit traits and the good qualities of Bangkok Christian College students, it is important to study *assessments* clearly, and survey the readiness of students and parents. This includes

preparing their technology, such as smartphones and internet access, to fully engage in evaluations. Additionally, teachers should monitor and guide students and parents to prevent potential risk issues.

For future research, educational institutions should study the challenges and obstacles in using information technology to promote the characteristics and qualities of their students. This will help identify and address specific problems more accurately. As shown in this study, the level of students should be taken into consideration as the target group for student development. Future studies may consider examining different educational levels in secondary schools and higher education institutions.

## 8. Funding

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## 9. The Authors

The three authors are on the staff of educational institutions in Bangkok, Thailand. The first author Wichai Srisud is Deputy Director of Bangkok Christian College; the second author Thaworn Intaraamorn is a full-time lecturer in the Department of Educational Policy, Management, and Leadership, Faculty of Education Chulalongkorn University; and Eknarin Bangthamai is working for the Department of Educational Technology, Faculty of Education, Silpakorn University. The authors share their research interest in the areas of educational administration, student development and empowerment models, and digital applications to curriculum and instruction.

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