

Decade-long Insights: Examining the Impacts of Faculty Development Funding Policies at Chulalongkorn University and a Counterproposal

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Abstract— This study examines the funding strategies of Chulalongkorn University's Learning Innovation Center (LIC) to support every type of education research in every level, initiated in 2011. We analyzed 267 research projects from 21 faculties and institutes, categorized based on the funding they received. The objective was to learn from past funding experiences to improve future decisions. Our analysis revealed that while many projects were successful within their classrooms, their impact was limited beyond those settings. These findings underline the urgent need to reevaluate and adjust our funding policies, calling for the incorporation of state-of-the-art knowledge in educational practices. By pinpointing past shortcomings, we aim to shape an improved funding strategy that broadens the impact of research projects, ensures equitable support across all faculties and institutes, and better aligns with the university's lifelong learning goals. Ultimately, this research seeks to augment the efficacy of LIC's initiatives, fostering a sustainable and innovative learning environment that aligns with national development strategies.
Keywords—Classroom Action Research, Active Learning, Teaching and Learning, Education Innovation, Funding, Scholarship

This research focuses on the funding that the university has granted to its faculty members since 2011. We strive to understand its effectiveness in order to improve the policies for the next stage. For the past 11 years, we categorize the funding into three types: 1) size-S fund - for small-scale classroom action research and active learning; 2) size-M fund - for medium-scale research on instructional development, and 3) size-L - large-scale research projects aimed at educational innovation. There have been 267 projects in total with a budget of approximately 1.13 million USD, involving 19 faculties and two institutes.

We examine the details of every research project, especially its outcomes, and impact on the community to illustrate the trend and uncover important insights. To do so, we wish to reflect on the past and offer a counterproposal for the next period. Our goal is to promote impactful research in teaching and learning, facilitating their continuous development and adding value to the whole. We also consider the direction of the university to embrace a lifelong learning goal that caters to the entire nation.

I. INTRODUCTION

Chulalongkorn University, a public university in Thailand with more than 30,000 students, has launched a lifelong learning ecosystem called "Learning Innovation for Lifelong Education (LILLE)" to align with the Education 4.0 framework mandated by Thailand's Ministry of Higher Education, Science, Research and Innovation's [1] policy on education reform, science, research, and innovation. The project aims to address the strategic direction for national development, including key challenges in building human capital, generating knowledge, fostering innovation, and promoting university roles. The responsible unit at Chulalongkorn is the Learning Innovation Center (LIC), in charge of offering research funding for learning innovation, producing online courses, and providing learning tools such as learning management systems (LMS).

II. LITERATURE REVIEW

This study has compiled a collection of research papers and articles related to four main topics: Classroom Action Research and Active Learning, Teaching and Learning Development, Education Innovation Development and Funding and Scholarship.

A. Classroom Action Research and Active Learning

Chulalongkorn strongly believes that classroom action research and active learning are essential mechanisms to design effective classes. They enhance students' awareness of the importance of understanding the lesson by having teachers address classroom problems and prioritize students' involvement in solving those problems. This aligns with the research conducted by D. Fadilah and M. Alwi [2] conducted a study on Increased Student Interest in Learning through the Application of Active Learning Methods in the

Thematic Learning, explored the use of active learning methods through an application to increase student's interest in learning during thematic learning. The study aimed to enhance student's engagement and motivation by incorporating interactive learning activities. C. C. Yin Albert et al. [3] conducted a study on Identifying and Monitoring Student's Classroom Learning Behavior Based on Multisource Information, focusing on identifying and monitoring students' classroom learning behavior using multiple sources of information. The study aimed to provide insights into students' learning patterns and behaviors, allowing for personalized and targeted instructional strategies. Additionally, F. Baroni and M. Lazzari [4] conducted a study on Universal Design for Learning at University: Technologies, Blended Learning and Teaching Methods. Their study examined the integration of technology, blended learning approaches, and diverse teaching methods to create inclusive learning environments that cater to the needs of all students. These studies led us to establish large funds to support such research.

B. Teaching and Learning Development

Teaching and learning have evolved through the utilization of technology and diverse learning management processes, as evidenced by the research conducted by B. Maraza-Quispe et al.[5]. They conducted a study on Towards the Development of Emotions through the Use of Augmented Reality for the Improvement of Teaching-Learning Processes. In their research explored the use of augmented reality to enhance teaching and learning processes by fostering emotional development. The study aimed to leverage augmented reality technology to create immersive and engaging learning experiences that facilitate emotional connections and improve learning outcomes. O. Dziubaniuk et al.[6] conducted a study on Learning and teaching sustainable business in the digital era: a connectivism theory approach. The study aimed to examine the effective integration of digital tools and resources in business education, emphasizing the importance of leveraging online platforms and networks for collaborative and connected learning. Additionally, C. Zhang [7] conducted a study on Influences of Problem-Based Online Learning on the Learning Outcomes of Learners. The study examined the impact of problem-based learning approaches implemented in online environments on students' learning achievements. It aimed to assess the effectiveness of this instructional method in promoting critical thinking, problem-solving skills, and knowledge acquisition.

C. Education Innovation Development

Innovations in education have led to the development and management of systematic learning processes, aiming to create a comprehensive learning experience and equip learners with skills applicable to research and teaching. This aligns with the research conducted by F. Hussin et al. [8] conducted a study on A systematic review of machine learning approaches in carbon capture applications. The study aimed to explore the use of machine learning techniques to optimize carbon capture processes, enhance efficiency, and reduce environmental impact. The research

focused on leveraging advanced computational methods to develop innovative solutions in the field of carbon capture and contribute to sustainable practices. E. S. Lufungulo et al. [9] conducted a study on Innovations and Strategies During Online Teaching in an EdTech Low-Resourced University. The study aimed to identify effective approaches and practices in online teaching, taking into consideration the limitations and challenges faced by low-resourced institutions. The research emphasized the importance of leveraging technology and innovative teaching methods to overcome barriers and provide quality education in online settings. Additionally, T. G. Almeida et al. [10] conducted a study on Oral health education for systemic sclerosis patients: A booklet report. The research aimed to provide educational materials that effectively communicate oral health practices and considerations for individuals with systemic sclerosis. The booklet report serves as a comprehensive resource to educate patients and promote oral health awareness within the systemic sclerosis community.

D. Funding and Scholarship

Research funding programs and educational innovations provide financial support to teachers engaged in teaching and research activities. This aligns with the research conducted by K. Abukari et al. [11] conducted a study on Student-managed investment funds: a review and research agenda. The study aimed to examine existing literature and research frameworks related to student-managed investment funds, highlighting the key concepts, challenges, and opportunities associated with this educational innovation. The research provided insights for future investigations and informed the development of effective strategies for implementing and managing student-managed investment funds in educational institutions. M. Dachyar et al. [12] conducted a study on Developing management education scholarship in a post COVID-19 world for global societal impact. The study explored strategies and initiatives for promoting education scholarship and research funding programs within universities, taking into account the changing educational landscape due to the COVID-19 pandemic. The research emphasized the importance of adapting management education practices and scholarship programs to address current challenges and contribute to societal development. Additionally, V. Ratten [13] conducted a study on Strategies to Improve the Education and Research Scholarship Program at the Universities. The study aimed to identify effective approaches to enhance the administration and management of scholarship programs, aligning them with emerging educational and research trends. The research findings provided valuable insights for universities to adapt their scholarship programs and support the academic community in a rapidly changing world.

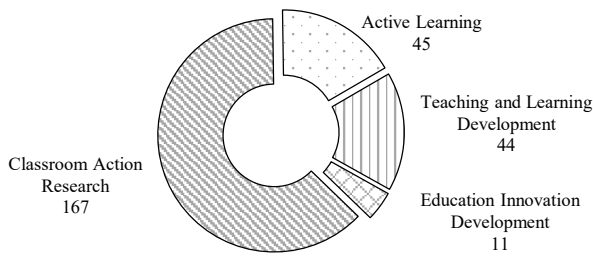


Fig. 1. Research Funding Support Program by LIC

III. METHODOLOGY

The research started with data collection from all projects supported by the LIC. The methodology consisted of three stages: data collection, descriptive statistics, and data grouping for analysis.

A. Stage 1: Data Collection

LIC supported various research projects, including 212 small-scale projects, with 167 focusing on classroom action research and 45 emphasizing active learning. Additionally, there were 44 medium-scale projects dedicated to instructional development and 11 large-scale projects aimed at educational innovation. As shown in the Fig. 1 Research Funding Support Program by LIC

B. Stage 2: Descriptive Statistic

Descriptive statistics were used to analyze the research project data supported by research funding. The analysis involved summarizing the data through frequency distributions, tables, and charts. Qualitative data measures such as percentages, proportions, ratios, and modes were employed to describe the data characteristics.

C. Stage 3: Data grouping for data analysis

The analyzed data was organized and presented through comparative analysis using charts and tables. This categorization allowed for a comprehensive understanding of the data components, including the derived conclusions and insights. Factors such as academic departments, fiscal years, allocated budgets, research types, and organizational branches (e.g., Health Sciences, Science and Technology, Social Sciences) were utilized for the categorization and comparison.

IV. FINDINGS

A. Types of Research Funding Projects

The Learning Innovation Center (LIC) has strategically categorized its research funding into four distinct groups to support a diverse range of educational research. These categories are designed to cover a broad spectrum of research areas thus ensuring comprehensive coverage of critical areas in educational research.

Classroom Action Research: This funding supports projects aimed at improving teaching methods and student learning within the classroom. It encourages educators to critically examine their practices to optimize learning outcomes.

Active Learning Research: This category funds research into active learning strategies, which involve students in the learning process, promoting engagement with the material and collaboration with peers.

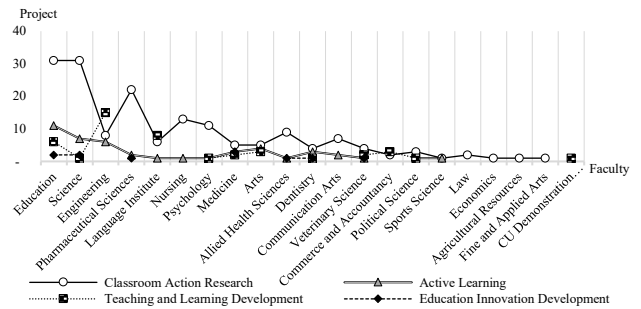


Fig. 2. Types of Research Funding Projects

Teaching and Learning Development Research: This funding supports broader research into enhancing teaching and learning processes, including studies on curriculum design, assessment methods, educational technology, and teacher training.

Education Innovation Development Research: This category funds projects focused on innovative approaches to education, such as exploring new teaching methods, integrating technology into the classroom, and developing novel educational tools or policies.

B. Faculties, and Institutes

Out of the 267 research projects funded, the Faculty of Education had the highest number with 50 projects (19%). The Faculty of Science followed with 41 projects (15%), the Faculty of Engineering with 29 projects (11%), and the Faculty of Pharmaceutical Science with 25 projects (9%). Several other faculties including the Language Institute, Faculty of Nursing, Faculty of Psychology, Faculty of Medicine, Faculty of Arts, and Faculty of Allied Health Sciences also had more than 10 projects each.

Given this strategic, it is logical that the Faculty of Education, which likely conducts a lot of research related to learning and teaching methodologies, received the highest number of funded projects. This suggests that the research focus of the Faculty of Education aligns well with the strategic priorities of the LIC.

Similarly, the Faculty of Science and the Faculty of Engineering also received a significant number of funded projects. This could be because these faculties are likely to be involved in research related to innovative learning tools and technologies, which aligns with the LIC's focus on learning innovation.

Conversely, faculties with fewer funded projects might be conducting research that is less directly related to learning innovation. While their research is undoubtedly valuable, it might not align as closely with the strategic priorities of the LIC, resulting in fewer funded projects.

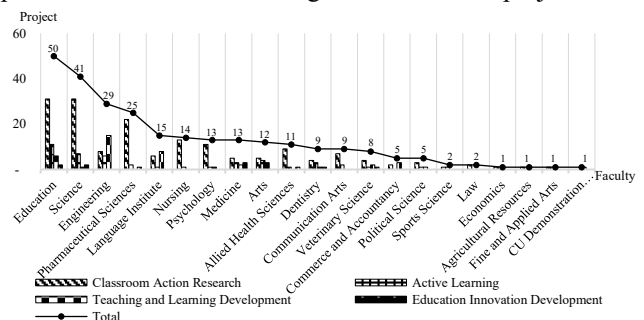


Fig. 3. Units, Faculties, and Institutes

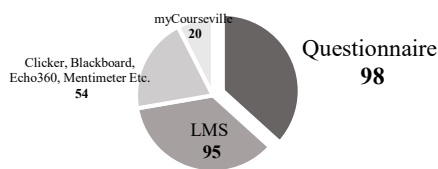


Fig. 4. Research Tools

C. Research Tools

To evaluate the progress and effectiveness of projects, as well as to contribute to active learning classrooms, several tools are commonly used:

Questionnaires (37% of usage): These standardized tools are used to collect data on student experiences or outcomes, providing valuable insights into both learner progress and project effectiveness.

Learning Management Systems (LMS) (36% of usage): These software applications manage educational courses and track student performance, monitoring learner progress and facilitating active learning.

Blackboard, Echo360, Mentimeter (19% of usage): These specific educational technology tools each contribute uniquely to the active learning environment and project evaluation. Blackboard is an LMS, Echo360 facilitates flexible learning through lecture recording, and Mentimeter promotes interactive presentations.

MyCourseVille (7% of usage): Developed by Chulalongkorn University, this course management platform supports online learning and teaching, aiding in tracking learner progress and fostering an active learning environment.

D. Research Highlights

The research highlights are selected focusing on significant works that address important issues and have value in research. These highlights include educational technologies and innovations that have demonstrated tangible impacts and the potential for future practical applications.

One of the most successful funding from LIC is MyCourseVille which is an online LMS developed in Chulalongkorn University and funded by LIC. Its development has been ongoing for several years. This LMS enables new types of interaction to stimulate learning and student participation in the modern age. It is designed to support both teachers in managing their teaching and students in learning online. MyCourseVille has garnered significant recognition and is now widely adopted in Thailand. Chulalongkorn University advocates for the use of this platform and encourages government and public schools to leverage it at no cost, aiming to enrich Thailand's education system further. According to a study by N. Cooharajanane [14], students expressed general satisfaction with the features offered by MyCourseVille. They found that its basic LMS functions were conveniently accessible through Facebook login. Moreover, the platform's course arrangement displayed visual icons instead of course titles, creating a more engaging interface. The clear presentation of assignments, including the date of posting and the established deadline, was another feature appreciated by the students.

The use of video media as a substitute for live animals in teaching the respiratory system of veterinary animals has been studied by P. Chueasiri [15] study focuses on using video media in Blackboard to replace the use of Livestock. The videos include horses, pigs, goats and sheep, allowing students to visually comprehend and understand the anatomy, structure, positional relationships, important components, and various organs of the animals without the need for direct animal interaction. As a result, students achieve their learning objectives more efficiently since they can study and review the video materials in Blackboard at their own pace and schedule, reducing the reliance on live animal experimentation in the laboratory and the associated high costs.

The use of technology in teaching the subject of Industrial Law in a medium-scale classroom to promote self-learning and understanding among students is examined in the case study of S. Taweechaemtham [16] study focuses on using clickers to facilitate active student participation in the classroom through the analysis of multiple-choice questions related to the learning objectives of the topic. The individual reasoning behind the students' selection of a particular answer is discussed and compared among those who chose the same answer and those who chose different answers. Furthermore, Blackboard is utilized as a central platform to provide both mandatory core content and supplementary materials, which enable students to access various relevant information necessary for the lesson easily and conveniently. This eliminates the need for carrying multiple textbooks or reference materials. Additionally, the use of video lectures and interactive student-teacher discussions is incorporated, enhancing the learning experience for the students.

The use of LMS: CourseVille to develop computer skills in the subject of Health Science for the course of S. Kulkiriti [17] was studied to complement traditional teaching methods. This was done through video lectures demonstrating computer skills and step-by-step instructions, making it easy to use. The system allowed students to receive course updates linked to Facebook, enabling them to review lessons at any time. Understanding of the lessons was enhanced through the review feature of the system. The use for submitting assignments and quizzes for this course was convenient and easy. The discussion board feature allowed students to exchange thoughts and contact the instructor for inquiries at any time through Facebook. Additionally, attendance could be checked by scanning a QR code.

The effectiveness of game-based learning for specific lecture-based courses was evaluated for P. Patthakosol [18] who assigned tasks in CourseVille and administered quizzes. Additionally, learning activities were organized in the form of various competitions, such as cable connection challenges, finding specified devices, and answering questions. These activities created enthusiasm among students to explore information both within the learning materials and beyond what the instructor recommended. As a result, the teaching and learning process became more efficient. Students gained additional skills from the content they learned and were able to fully engage in hands-on activities.

TABLE I. UNITS, FACULTIES, AND INSTITUTES

Units, Faculties and Institutes	Total	Classroom Action Research	Active Learning	Teaching and Learning Development	Education Innovation Development
Education	50	31	11	6	2
Science	41	31	7	1	2
Engineering	29	8	6	15	-
Pharmaceutical Sciences	25	22	2	-	1
Language Institute	15	6	1	8	-
Nursing	14	13	1	-	-
Psychology	13	11	1	1	-
Medicine	13	5	3	2	3
Arts	12	5	4	3	-
Allied Health Sciences	11	9	1	-	1
Dentistry	9	4	3	1	1
Communication Arts	9	7	2	-	-
Veterinary Science	8	4	1	2	1
Commerce and Accountancy	5	2	-	3	-
Political Science	5	3	1	1	-
Sports Science	2	1	1	-	-
Law	2	2	-	-	-
Economics	1	1	-	-	-
Agricultural Resources	1	1	-	-	-
Fine and Applied Arts	1	1	-	-	-
CU Demonstration Secondary School	1	-	-	1	-
Summary	267	167	45	44	11

The budget total 1.16 million USD, the highest funding is allocated to medium-scale projects dedicated to teaching and learning development, receiving 0.78 million USD. Small-scale projects are the second highest funding with 0.18 million USD. Large-scale projects aimed at educational innovation development are allocated a budget of 0.13 million USD. The lowest funding is given to small-scale projects emphasizing active learning, receiving 0.05 million USD. Interestingly, although medium-scale projects receive the highest funding, they have fewer research outputs compared to small-scale projects emphasizing active learning.

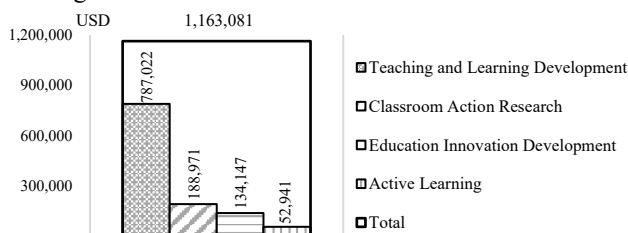


Fig. 5. Budgeting

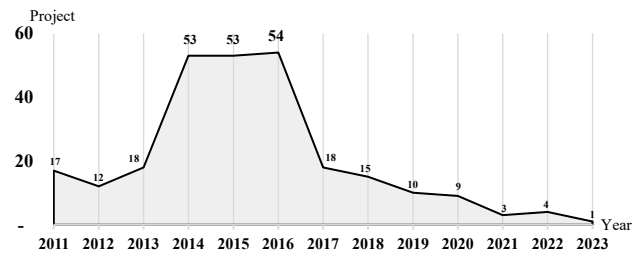


Fig. 6. Fiscal year

The COVID-19 pandemic has affected the support for research projects from LIC. Educators and learners have had to adjust to online teaching and learning methods, leading to significant changes in planned or prepared research projects. This includes a greater focus on studying and understanding the new educational management system, particularly in areas such as online learning management, assignment submission, and online examination procedures.

The highest number of funded research projects was observed in fiscal year 2016, totaling 54 projects. The second-highest number was in fiscal year 2015-2016 with 53 projects. Fiscal years 2014-2015 and 2018-2019 had 18 research projects each.

V. CONCLUSION

A. Research Projects in the Past decade

Between 2011 and 2023, a total of 267 research outcomes were from the conducted research projects.

Among the research projects, the small-scale projects (S) yielded the highest number of outcomes, comprising 212 projects (79%). The majority of these projects focused on quantitative and qualitative research, totaling 169 projects (64%). Furthermore, 96 projects (36%) utilized assessment instruments and questionnaires as research tools.

B. Topics of New Research Formats

In the past 11 years, LIC has supported research projects with specific funding patterns. With these findings, we found that most of the research failed to offer impacts to a wider learning circle. The outcome from each project seems to answer to only a specific classroom setting. Furthermore, the funding's from the university have been skewed toward particular faculties. And more importantly, we must consider adopting state-of-the art knowledge or technology to apply in education such as artificial intelligence (AI) or computer-based examination and revise our funding policy.

M. Mason [19] research emphasizes the need for effective management and budget allocation in research funding, requiring involvement from all academic disciplines.

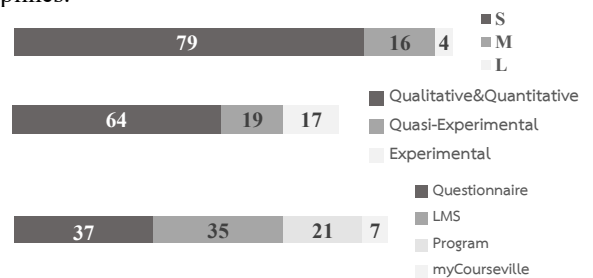


Fig. 7. Summary of the Research Funding Program

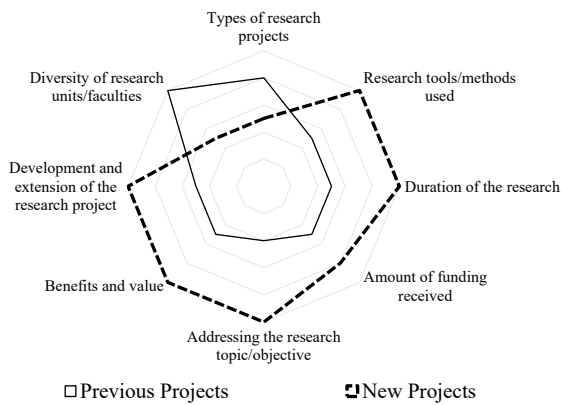


Fig. 8. The new format of research funding projects

C. The Counterproposal

New research projects should emphasize academic value creation and stakeholder needs, including faculty, students, staff, and others. The projects aim to augment educational tools using research outcomes and developing skills. This involves exploration of new product forms, untapped analytical tools for data analysis, problem formulation, and hypothesis testing to measure the efficiency of innovative methods. Independence and openness are encouraged in research design to promote innovation. Differences between the previous policy and the counterproposal are illustrated in Fig. 8.

Based on previous research projects supported by LIC, funding has mainly been allocated to surveys, interviews, classroom research, and active learning. However, Chulalongkorn University recognizes the importance of research and innovation as key drivers for the institution. Consequently, the research funding strategy has been adjusted to prioritize innovation and problem formulation. Teachers are encouraged to adapt their research project strategies accordingly. The investment in these new projects is expected to positively impact educational innovation and the management of teaching and learning at Chulalongkorn University.

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