

# **Development of Learning Management Model of Collaborative Learning and Positive Coaching on Cloud Computing System**

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*This study aims to systematically review the learning management model on cloud computing system using collaborative learning and positive coaching. The author uses the literature review to synthesize research as the main process to study related documents, books, research studies, and articles both domestically and internationally. They are selected by purposive sampling for 69 topics. The documents are analyzed by systematic review. This study is a qualitative study and uses content analysis by using keywords to discover three issues as follows: Cloud computing, Collaborative learning, and Positive coaching. From the results of this study, Cloud computing comprises six components: Cloud learning content, Cloud collaboration, Cloud communication, Cloud creation, Cloud presentation, and Cloud evaluation. The collaborative learning process has five steps as follows: Engagement phase, Exploration phase, Transformation phase, Presentation phase, and Reflection phase. Positive coaching comprises five process as follows: Construct the positive relation, Set a clear and challenging goal, Implement a challenging goal to smooth practice, Set a more challenging goal and practice smoothly, and Evaluate and expand the experience, reward the outcome and discovery.*

*Keywords: cloud computing, collaborative learning, positive coaching*

## **INTRODUCTION**

Current technological advances are playing a key role in the development of formal education sector by providing multiple modes of learning delivery and communication that can meet, at low cost, the demand for continuing education. Ultimately, the question of interest for policy makers is how to employ modern technology to engage distant learners in collaborative learning sessions. Furthermore, given the continuous need for capacity building of universities in developing countries, educational policy makers have no option but to exploit technological and pedagogical advances in the formal education sector. Thus, cloud computing and its applications are vital to the future of distance education worldwide (Al-Samarraie, H., & Saeed, N, 2018). Today, cloud computing has become the predominant technology that can propose

unlimited computing for different social or business applications (Naveed, Q.N., Ahmad, N. (2019). At the educational segment development stage, cloud computing technologies are cost-effective services that enable the generation of the learning quality (Liu, Z.-Q., Dorozhkin, E., Davydova, N., Sadovnikova, N. (2020). Cloud computing is a paradigm for large-scale distributed computing that leverages existing technologies such as virtualization, service orientation, and network computing. They offer another way to acquire and manage IT resources on a large scale. Today, cloud computing technologies are in the service of education.

The new wave of innovative teaching techniques has come, and the researchers have explored new teaching methods supported by digital technology. The universities are necessary to prove that they are able to provide a digital experience to the new students. Computer and cellular can be used smartly in world of education. Information technology based on cloud and advanced analytics enables new opportunities in improving and redefining the experience in teaching and learning activities.

The optimal environment for digital learning is via cloud learning, which is the concept inspired by cloud computing that emphasizes learning by sharing resources and the collaborating of learners to initiate a personal learning environment. It is an approach to construct the determination to the individual learner, add responsibilities, increase commitment in the content, and build and adapt the appropriate learning process to oneself. Consequently, in-depth learning arises via experience, making the learner more confident and ready to compete, without limitations on tools or equipment. Moreover, the learners are free to choose the learning strategy and duration, collaborate with the teacher, and share resources without limits via the applications supporting the cloud (Song et al., 2020; Cornetta et al., 2019).

If this technology is used to plan the instructional activities, it would be quick, reliable, safe, and enhance the efficiency of learning via cloud technology to set the activities, present and transfer knowledge with collaborative learning which helps the learner and teacher and among the learners to communicate regardless the location and time (Bergin, C., 2018).

The optimal environment for digital learning is via cloud learning, which is the concept inspired by cloud computing that emphasizes learning by sharing resources and the collaborating of learners to initiate a personal learning environment. It is an approach to construct the determination to the individual learner, add responsibilities, and increase commitment in the content, as well as build and adapt the appropriate learning process to oneself. Consequently, in-depth learning arises via experience which makes the learner become more confident and ready to compete, without limitations on tools or equipment. Moreover, the learners are free to choose the learning strategy and duration, collaborate with the teacher, and share resources without limits via the applications supporting the cloud (Song et al., 2020; Cornetta et al., 2019).

This approach allows the learner to participate in a small group where the learners learn together, exchanging their experience, information, opinions, attitude, and skills. They are interdependent and share accountability by having discussions, exchanging their opinions, and sharing the learning resources. The group's members interact, share the common achievement of learning success, and learn how to study with others (Kongrugsu, N., Nilsook, P., and Wannapiroon, P., 2016). Importantly, living with other people is one of the key unavoidable factors. Further, collaboration is one of the learner's skills in the 21<sup>st</sup> Century (Partnership for the 21<sup>st</sup> Century skills, 2013). Education in the 21<sup>st</sup> Century focuses on educating people to get wisdom as it is more significant to everyone than other resources. Therefore, instructional management in the 21<sup>st</sup> Century is learner-based learning, in which the learner uses the skills to construct knowledge by themselves and apply it to match the interest, proficiency and potential by focusing on integration, multiple living and non-living sources to develop wisdom, as well as the measure and evaluation of results. Another component of instructional management in the 21<sup>st</sup> Century is the change in teacher's roles from being the teacher to a "coach" or "learning facilitator" who motivates, encourages and instructs the learning method and activity and learning innovation design (Thongking, P., 2020). The author synthesized it as a process of positive coaching coupled with the concept of the flow from the positive psychology principle (Seligman, 1998; Csikszentmihalyi, 2006; Green, S., and Palmer, S., 2018).

It is a coaching process with the activities, techniques, and flow to acquire the efficient positive coaching process so the trainee develops self-development to work happily and achieve the goal (Bonniwell, I., & Smith, W. A., 2018; Wongyai, V., and Patphol, M., 2019). It is moving forward to a digital world

where the operation is processed via a computer network to achieve the learning objective and strengthen collaborative learning skills.

## LITERATURE REVIEWS

### Cloud Computing

Cloud computing is the top popular information technology and communication, acting as the new paradigm for information technology sharing resources and computer proficiency. It is available for many external users via plentiful resources on the internet. Furthermore, cloud learning is learning environment management under cloud computing technology. Scholars give various definitions of cloud computing, though many define it as follows;

Wu, W., & Plakhtii, A. (2021) stated that Cloud computing is among the emerging technological innovations that can dramatically influence education by applying dynamic scalability and resource efficiency. The cloud-based e-learning model has a scale efficiency mechanism that transfers the role of constructing the e-learning system to cloud computing vendors. This gives providers and users the possibility to build an advantageous relationship. For education, such a model becomes an instrument that can save a considerable share of expenses for providing an innovative educational process. Partnerships and cost-effectiveness continue to be a privilege of cloud-based e-learning because educational institutions are responsible only for the learning process, content management, and knowledge delivery, while the vendor deals with the construction, maintenance, development, and management of the educational system. The cloud-based environment can run on a wide range of hardware devices and support the creation of next-generation e-learning systems. Modern users do not require any special knowledge about cloud computing to connect their PCs or laptops to the server.

Humeniuk, T., & Romaniuk, P. (2023) stated that cloud computing was the development of the information technology industry that offered three diverse services based on infrastructure, involving Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) for the development of software as a service covering remote computing via the applications and data storage that linked via cloud computing. It had several advantages that could be used via mobile phones and mobile internet. For this reason, cloud computing is creeping dramatically into the educational field.

Reza Bazi, H., Hassanzadeh, A., & Moeini, A. (2017). define cloud computing as the service for accessing computer resources, including network, host, server, applications, and internet network, which the user is able to access quickly.

Gartner (2013) defined cloud computing as a new technology causing a change in information technology and communication utilization in the organization. Its prominent qualities involve the service in support and resizing, flexibility to fulfill user demand, sharing information technology resources, support in the service charge, and internet use.

Kultawanich (2015) summarized that cloud computing is the technology using shared resources on the computing network or other services from a system structure to applications in which the users might appropriately identify the requirement via the internet system. In short, cloud computing is the technology for the computer user via the internet that provides a specific service. The service provider shares the all-time desired resources accessible to the users only via the internet connection, regardless of where or which system the resources come from. Importantly, technical knowledge is not required by the user.

From the above definitions from scholars, cloud computing is the technology for communicating information technology, which is the service that responds to user demands in terms of resources and information technology as well as collaborative service promotion within the same network. The service provider shall supply the computer resources including a computer, network system, storage unit, processing system, and software to the customers. All management and safety are the service provider's responsibilities to enhance data management so the user can quickly access the data with stability. The synthesis of cloud computing systems from the educators implemented the relevant concepts to identify the components to use as the primary information for planning the instructional plan. The synthesis of cloud computing systems can be concluded with the following table 1.

**TABLE 1**  
**SYNTHESIS OF CLOUD COMPUTING**

Cloud Computing Components	Boonprasom & Sintanakul (2019)	Thaweasin & Pichayapha (2020)	Kultawanich (2012)	Parnpitcha (2015)	Paripas (2016)	Qiang Li (2021)	Thitipetchakul et al. (2020)	Cornetta et al. (2019)	Song et al. (2020)	Surameery & Shakor (2021)	Summarize
Cloud Learning Content	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Collaboration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Communication	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Creation	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Cloud Presentation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Evaluating	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1 is a synthesis of results of the cloud computing system indicating that the components were similar since cloud learning was the computing technology operating on the internet network sharing the resources to various computers that are accessible from anywhere and anytime and can increase or reduce the resources based on user demand. The tools for cloud computing instructional management are comprised of six components: 1) Cloud Learning Content, 2) Cloud Collaboration, 3) Cloud Communication, 4) Cloud Creation, 5) Cloud Presentation, and 6) Cloud Evaluating.

### **Collaborative Learning**

Wijayadi and Pramudana Ihsan (2023) stated that the steps of the Collaborative learning process in its implementation needs some steps in the learning activity. Collaborative learning has six main steps as follow: 1) Stating the goals and motivating the learner. 2) Providing information in the form of demonstration or reading text. 3) Organizing the students into smaller groups. 4) Guiding the group to work or learn. 5) Assessing what has been learned by asking each group to present the result of the discussion. 6) Giving reward both the groups and individuals.

The Royal Institute of Thailand (2008) stated that “Collaborative Learning” it was the learning process where the learners learn interdependently with close interaction and social skills to collaborate, analyze group work performance, and evaluate learning individually.

Blackcom (1992) explained that collaborative learning is a successful strategy for a small group of learners who have different abilities. Various learning activities are applied to enhance understanding. Each member has responsibility and supports others, which constructs an environment of learning achievement.

Srimungkhun (2012) mentioned a theory that a small group with 3-6 members with different proficiency would have competitive interaction or collaboration to help each other learn and achieve the goal. Instructional management follows this theory to guide the learners to assist each other to learn through

the activities that require their participation, discussion, interaction, cooperation, group analysis, and job allocation. Regarding the learning evaluation, both qualitative and quantitative evaluations are needed from different measures. Importantly, the learner should take part in the evaluation. Meanwhile, the teacher should set time for the learner to analyze the group work and members' behavior to improve the faults.

Lynch (2010) talking about the learning concept as the sub-group learning with 4-6 members who have diverse capabilities to achieve the goal, the learners have competitive interaction to learn and collaborate in learning. Instructional management supports them to learn via the activities that allow them to discuss, interact, work as a group, analyze, and share responsibilities.

Gaillet (1994) has conveyed a result of research that says collaborative learning methods were experimented with, and found to be successful. He also believes that teachers must reduce their action and let the students free to learn from another. Collaborative learning is designed to seek a goal that must be achieved collectively. When several students are in a group, the collaboration is a way that is related to mutual respect and appreciate the capabilities and contribution of all members of the group. A collaborative way of learning can encourage students to be more active and interactive as well.

Davies, Fidler, & Gorbis (2011) state that virtual collaboration is one of ten crucial skills for the future workforce. They enable to work productively when a virtual collaboration is established. While technologies are connecting the students, it is easier for them to share ideas or to learn together without any physical separation. It is very important to create an environment equipped with a new set of competencies dealing with virtual technology. Actually, collaborative learning is not a new idea. Indeed, people have been working and learning informally in groups for many years ago. There is a fact that many students, especially at university level, prefer to learn individually.

Vygotsky (1978) state that learning is a social process and a crucial point to developing thought and behavior patterns. Although many educational practitioners have known the collaborative learning but they seldom apply it particularly at the university level.

T. Panitz (1999) conveys many distinct benefits - academic, social and psychological - that can be expected from the application of group work. That is why this paper tries to elaborate some possible and important points about the benefits of collaborative learning.

V. Dennen (2000) The word 'collaborative' implies that two or more students work together in a group in order to obtain a common goal. All members of the group are obliged to respect each individual's contribution to the whole. A learning method that uses social interaction as a means of constructing knowledge is as a core of collaborative learning.

A. S. Goodsell and A. Others (1992) It is broadly defined that collaborative learning reforms classroom learning by altering passive students who receive information given an experienced teacher to active agents in constructing knowledge. It provides structured group activities and needs social skills that students need to work together.

Belenky, M., Clichy, B., Goldberger, N., & Tarule, J. (1986) Collaborative learning causes a significant change from the typical teacher-centered or lecture-centered to student-centered learning activities. So collaborative learning class are conducted based on students' discussion and active work with the course material. So the role of the teacher in collaborative learning is not as an expert transmitter of knowledge but as an expert designer of intellectual experiences for students.

In conclusion, collaborative learning is an instructional management process focusing on the equality of the learners. Each group member strengthens the learning performance and supports each other to reach the common goal by turning competition into collaboration, which is called collaborative learning in this research. The relevant theories and concepts to collaborative learning were synthesized to determine the learning approach and the core of collaborative learning based on the educators. The synthesis of the collaborative learning process can be concluded with the following table. The study involved research on the analysis process of collaborative learning as shown on Table 2.

**TABLE 2**  
**SYNTHESIS OF COLLABORATIVE LEARNING PROCESS**

Collaborative Learning process	Wijayadi & Pramudana Ihsan (2023)	Martin & Dixon-Woods (2022)	Johnson and Johnson (2019)	Reid, et al. (2002)	Kordaki and Grigoriadou (2010)	Soon and Sarrafzadeh (2010)	Kemmanat Mingsiritham (2011)	Alanis-Funes, Neri, and Noguez (2011)	Goodsell, et al. (1992)	Siththichai Laisema & Pallop Piriyaawong. (2012)	Summarize
Engagement phase	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Exploration phase	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transformation phase	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Presentation phase	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Reflection Phase	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

Table 2 is a synthesis of the collaborative learning process that has five steps as follows: 1) Engagement phase, 2) Exploration phase, 3) Transformation phase, 4) Presentation phase, and 5) Reflection phase. It can be concluded that Collaborative learning synthesis is the process by the theorists acquired from the analysis and synthesis of the research problems, relevant principles, concepts, theories, and research to find out the need for solutions. This is the learning approach where the teachers encourage and push the learners to build collaborative learning skills via digital technology and presentation that motivates the learners to think, analyze, make decisions, resolve problems, and create performance to be published, resulting in collaborative learning.

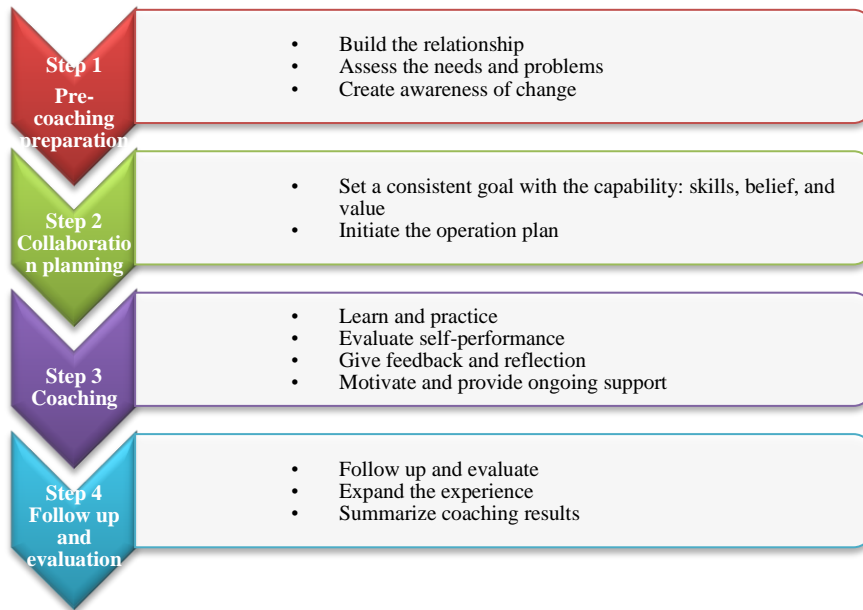
### Positive Coaching

**Defining Positive Psychological Coaching** The results showed that positive psychological coaching can be defined as: ‘A short- to medium-term professional, collaborative relationship between a client and coach, aimed at the identification, utilization, optimization and development of personal/psychological strengths and resources to enhance positive states, traits, and behaviors. Utilizing Socratic goal setting and positive psychological evidence-based approaches facilitate personal/professional growth, optimal functioning, enhanced wellbeing, actualizing people’s potential and aid in coping with work demands.’ (Van Zyl, L. E., Roll, L. C., Stander, M. W., & Richter, S. (2020).

Positive coaching includes coaching activities, positive psychology techniques, and the flow of positive psychology to acquire an efficient coaching process. Positive coaching is the synthesis of the following concepts. It is concluded that coaching is the individual potential development focusing on the work. It improves working skills and changes working behavior to complete the objective of any specific task by cooperation between the coach and trainee. It is appropriate for building new skills and educating new practice. The relevant theories and concepts to Positive coaching were synthesized to determine the learning approach and the core of Positive coaching based on the educators. The synthesis of the Positive coaching process can be concluded with the following: Van Zyl, L. E., Roll, L. C., Stander, M. W., & Richter, S. 2020; Tim Lomas 2020; Green. S and Palmer. S. 2018; Seligman 2005; Nakamura and Csikszentmihali 2002; Csikszentmihali 1990; Snyder and Lopez 2020; Corrie, S. 2018; Boniwell, I., & Smith, W. A. 2018; Weiss & Kolberg 2003; Flahert 2010; McManus 2006; Wongyai, V., and Patphol, M., 2019, Manoch

Panthongviriyakul 2007; Sathirapanya, 2010; International Coaching Association, 2013). For ease of understanding, the author likes to present the synthesis results for the process and steps of positive coaching, as in Figure 1, Figure 2, and Figure 3.

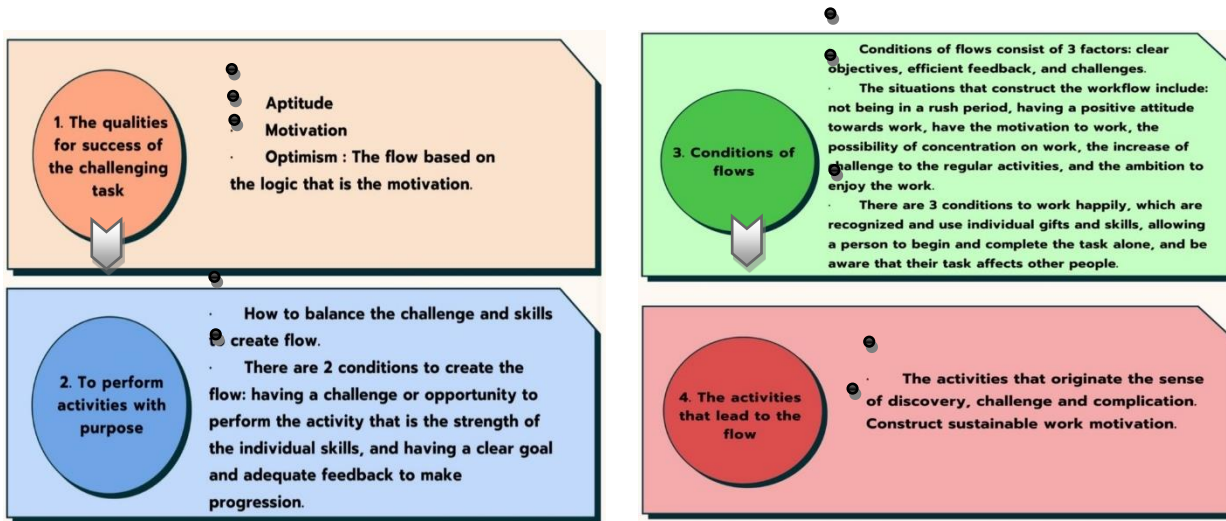
**FIGURE 1  
THE COACHING PROCESS**



### **The Flow Process in Positive Psychology**

The flow process in positive psychology is the mental state of operation in which a person who performs an activity is highly energized and focused. Also, they're fully involved and thoroughly enjoying the process. It is concluded that the flow state in positive psychology is the positive work that strengthens the genius and capability to live happily by having human strength as the core of development focusing on the positive behavior research such as value development, the flow in activities, emotional quotient, optimism, hope and happiness, positive self-esteem and relation with others, as well as positive actions (Green, S., and Palmer, S., 2018; Seligman, 2005; Nakamura and Csikszentmihali, 2002; Csikszentmihali, 1990; Snyder and Lopez, 2020; Corrie, S., 2018; Tim Lomas, 2020; Boniwell, I., & Smith, W. A., 2018). For ease of understanding, the author likes to present the flow process in positive psychology from the synthesis as in Figure 2.

**FIGURE 2**  
**THE FLOW PROCESS IN POSITIVE PSYCHOLOGY**



From the concepts and theories of the coaching process and the flow process in positive psychology, the author synthesized them as the positive coaching process to acquire the efficient coaching process to allow the trainee to have self-development, work continuously and happily, and produce satisfying work to achieve the goal of coaching. For ease of understanding, the author likes to present the process of positive coaching from the synthesis as in Figure 3.

**FIGURE 3**  
**PROCESS OF THE POSITIVE COACHING**



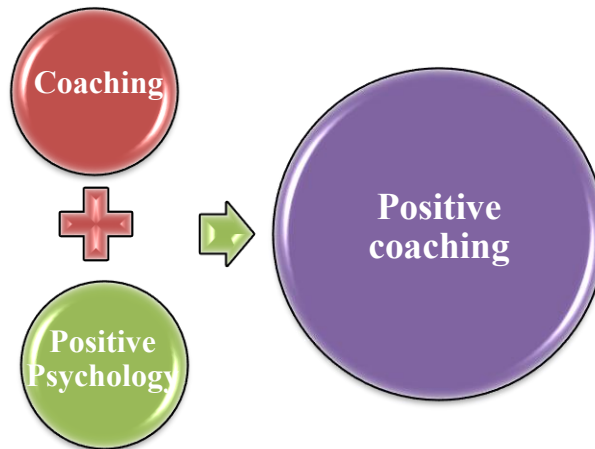
- 1) Construct the positive relation:** identify the strengths, build the motivation from success, construct the awareness of change, and set the criteria for rewarding success (determination to perform quality work).
- 2) Set a clear and challenging goal:** set the objective, monitor the key fundamentals, provide positive feedback, and adjust the objective to suit the challenge and skills, set the schedule.
- 3) Implement a challenging goal to the smooth practice:** arrange a good work environment, follow the work schedule, evaluate self-performance, reflect and give positive feedback.
- 4) Set a more challenging goal and practice smoothly:** set a more challenging goal, balance the goal and skills, give an appropriate timeline, provide feedback during the work, evaluate, reflect and give positive feedback, set the goal to increase the challenge based on the developed skills and complete the task to achieve the goal.
- 5) Evaluate and expand the experience, reward the outcome and discovery:** evaluate the performance by oneself, peer and coach, reward the discovery and give positive feedback to



develop the task, lesson learned and expand the experience to develop the current and new tasks, reward the person who is satisfied with work and has quality work that meets the standard.

From the concepts and theories of the coaching process in Figure 1, the flow process in positive psychology in Figure 2, and the process of the positive coaching in Figure 3, the author synthesized them as positive coaching process as in Figure 4.

**FIGURE 4  
POSITIVE COACHING PROCESSES**



**METHODOLOGY**

For this study, the author uses a systematic review for related documents, books, research studies, and domestic and international articles. They are selected by purposive sampling for 61 topics by selecting studies developed during 1990-2024. This qualitative study uses content analysis by using keywords to discover three issues: Cloud computing, Collaborative learning, and Positive coaching. This knowledge is integrated to create collaborative learning concepts on cloud computing systems, applying positive coaching for undergraduate students. Information resources used in the study are shown in the following table 3.

**TABLE 3  
INFORMATION RESOURCES USED IN THE STUDY**

Resources	Types of Resources	Quantity/ Topic	Total/Topic
<b>Domestic</b>	1. Books	4	4
	2. Research studies/Articles	13	13
<b>International</b>	1. Books	19	19
	2. Research studies/Articles	33	33
<b>Grand total</b>			<b>69</b>

The author uses the following methodologies to conduct this study.

1. The author collects and studies related documentation in the form of books, journals, articles, and research studies by selecting them by purposive sampling. Then, they are studied by using Screening context.

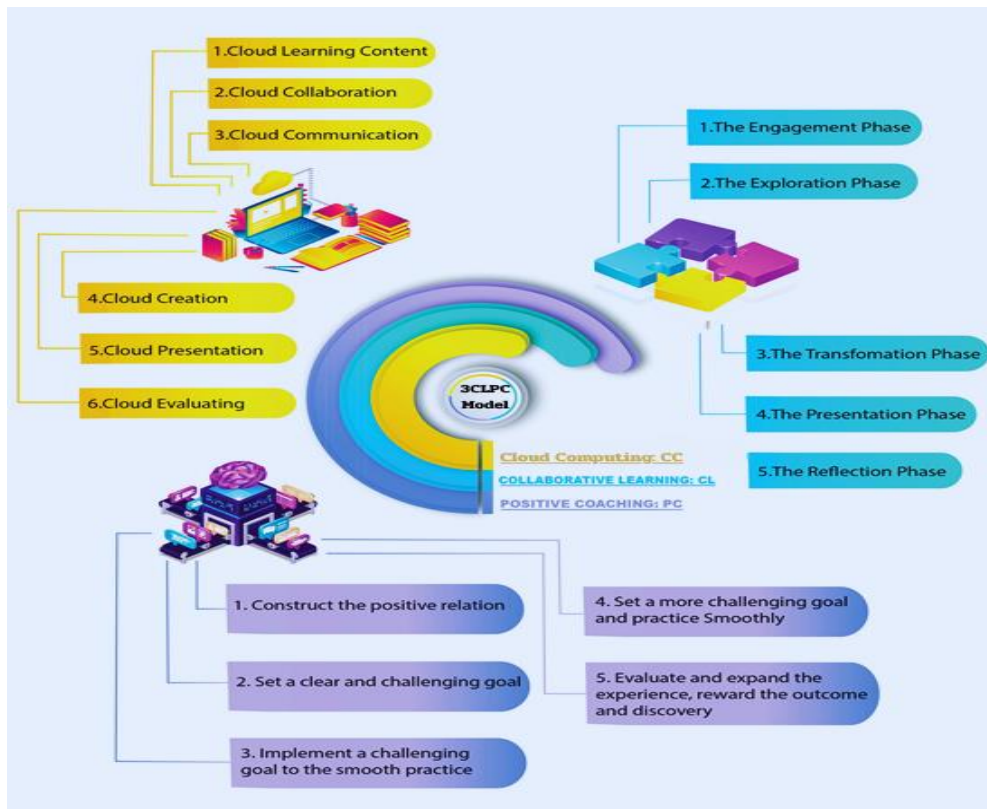
2. The author systematically analyses the collected documentation to generate knowledge that can be used to synthesize the collaborative learning concepts on cloud computing system applying positive coaching.

## RESULTS

The author synthesized of Cloud computing (Boonprasom, C., & Sintanakul, K. 2019; Thaweesin & Pichayapha 2020; Kultawanich 2012; Parnpitcha 2015; Paripas 2016; Qiang Li 2021; Thitipetchakul et al. 2020; Cornetta et al. 2019; Song et al. 2020; Surameery & Shakor 2021. The synthesized of Collaborative learning (Wijayadi and Pramudana Ihsan 2023; Martin & Dixon-Woods 2022; Johnson and Johnson 2019; Reid, et al. 2002; Kordaki and Grigoriadou 2010; Soon and Sarrafzadeh 2010; Kemmanat Mingsiritham 2011; Alanis-Funes, Neri, and Noguez 2011; Goodsell, et al. 1992; Sitthichai Laisema & Pallop Piriyasurawong 2012), and The synthesized of Positive coaching Van Zyl, L. E., Roll, L. C., Stander, M. W., & Richter, S. 2020; Tim Lomas 2020; Green. S and Palmer. S. 2018; Seligman 2005; Nakamura and Csikszentmihali 2002; Csikszentmihali 1990; Snyder and Lopez 2020; Corrie, S. 2018; Boniwell, I., & Smith, W. A. 2018; Weiss & Kolberg 2003; Flahert 2010; McManus 2006; Wongyai, V., and Patphol, M., 2019; Manoch Panthongviriyakul 2007; Sathirapanya, 2010; International Coaching Association, 2013).

By synthesizing Cloud computing in Table 1, Collaborative learning in Table 2, and Positive coaching in Figure 3, the author concluded the guideline of the collaborative learning model on cloud computing system applying positive coaching for undergraduate students, as follows.

**FIGURE 4**  
**LEARNING MANAGEMENT MODEL ON CLOUD COMPUTING SYSTEM USING COLLABORATIVE LEARNING AND POSITIVE COACHING (3CLPC MODEL)**



From Figure 4, the learning management model on a cloud computing systems using collaborative learning and positive coaching can be concluded with the following table.

**TABLE 4**  
**LEARNING MANAGEMENT MODEL ON CLOUD COMPUTING SYSTEM USING COLLABORATIVE LEARNING AND POSITIVE COACHING**

<b>Cloud Computing System</b>	<b>Collaborative Learning</b>	<b>Positive Coaching</b>	<b>Learning Management Model on Cloud Computing System Using Collaborative Learning and Positive Coaching.</b>
1) Cloud Learning Content 2) Cloud Collaboration 3) Cloud Communication 4) Cloud Creation 5) Cloud Presentation 6) Cloud Evaluating	1) Engagement Phase 2) Exploration Phase 3) Transformation Phase 4) Presentation Phase 5) Reflection Phase	1) Construct the positive relation 2) Set a clear and challenging goal 3) Implement a challenging goal to the smooth practice 4) Set a more challenging goal and practice smoothly 5) Evaluate and expand the experience, reward the outcome and discovery	<p><b>Collaborative learning process</b> comprises three steps.</p> <p><b>Step 1</b> Before implementing cloud technology. The teacher introduces the topics and the learner selects the topic for the group to plan and make an agreement. Each step takes place in a normal class.</p> <p><b>Positive coaching Process: Construct the positive relation.</b></p> <p><b>Step 2</b> Implementing cloud learning. It is the collaboration and brainstorming within the group using cloud technology such Google Plus, Google Doc, Google Drive, Google Hangouts, and YouTube. The learner has to practice brainstorming to work together in five phases.</p> <p><b>Positive coaching Process: Set a clear and challenging goal.</b></p> <p><b>Step 3</b> After implementing cloud technology. It involves creating the work, presenting the outcome, discussion, and</p>

Cloud Computing System	Collaborative Learning	Positive Coaching	Learning Management Model on Cloud Computing System Using Collaborative Learning and Positive Coaching.
			summarizing. Each step takes place in a normal class.  <b>Positive coaching process:</b> Implement a challenging goal to the smooth practice. Set a more challenging goal and practice smoothly. - Evaluate and expand the experience, reward the outcome and discovery.

## DISCUSSION

The collaborative learning concepts on cloud computing system applying positive coaching process. The steps are as follows: **Step 1 Engagement Phase** assigns the situation presentation. The teacher introduces the topic to the learners to choose based on their interests. The teacher advises collaborative learning to initiate positive relations by considering the mission, information, and knowledge provided, as well as the tools as guidelines for operation. Primary information about the project is provided via conversation. 4-6 learners who are interested in the same topic are put into the same group. If any topic has over the number of learners, they have to draw or other methods can be applied. The positive coaching process are as follows: **Construct the positive relation;** identify the strengths, build the motivation from success, construct the awareness of change, and set the criteria for rewarding success (determination to perform quality work). **Step 2 Exploration Phase** This is the step of brainstorming. The learner shall be advised about the project or task to set the challenging goal, study the project objective or work together to discuss how to collaborate and set the work plan, and share their thoughts. The process concerns the analysis of the difficulty and proficiency of each member. The members can choose the topic they are good at and get approval from the other members. The teacher supplies them with resources such as books, journals, and websites, while other teachers take the role of learning directors to respond to the demand and reflect the learner's thoughts. The positive coaching process are as follows: **Set a clear and challenging goal;** set the objective, monitor the key fundamentals, provide positive feedback, and adjust the objective to suit the challenge and skills, set the schedule. **Step 3 Transformation Phase** This is the phase of practice and planning for the agreement. The learners meet to find the agreement, set the research timeline, determine the content's objective and scope, and identify the methodology and responsibility of the members. Each member should share, discuss, question, argue, suggest, and exchange their opinions to identify the interesting topics and present the performance to the teacher to examine the scope of content and to the peers to add other interesting points. Moreover, the learners adapt to other equipment and improve the data, set the plan and work together as they expect from the collaborative learning environment. The members evaluate the performance, while the teacher monitors the consistency and supplies other facilities as the learners' demand, as well as provides the necessary information to transform the goal to practice. **Step 4 Presentation Phase** This is the presentation of the outcome for each group. The members prepare the

content and present what they have learned following the learning plan. Each group evaluates the presentation of other groups and their group. The teacher might help the learners to design the evaluation form and suggest the concept of the planning process in terms of whether or not it is efficient or consistent. Each team reports the problems and solutions. The teacher's recommendations support the accomplishment. The goal should be more challenging. **Step 5 Reflection Phase** This is the step of knowledge reflection. The learners reflect on their learning and propose ideas to the teacher. This step concerns knowledge assessment, the expansion of experience, rewarding the outcome and discovery. Besides, this is how to consider the learner's reaction that is useful for setting the learning plan in the future. The learners evaluate their own performance and the other members' performance. In contrast, the teacher evaluates the consistency of each group and informs the learners, discusses and summarizes to answer the questions. The teacher and learners summarize the lesson and evaluate the group performance to find any weaknesses and propose improvements (Thongking, P., 2020; Green, S., and Palmer, S., 2018; Mingsiritham, 2011; Ficapal-Cusía, P., and Boada-Graub, J., 2015; Panlumlers, Nilsook and Jeerungsuwan, 2017). The positive coaching process are as follows: **Implement a challenging goal to the smooth practice;** arrange a good work environment, follow the work schedule, evaluate self-performance, reflect and give positive feedback. **Set a more challenging goal and practice smoothly;** set a more challenging goal, balance the goal and skills, give an appropriate timeline, provide feedback during the work, evaluate, reflect and give positive feedback, set the goal to increase the challenge based on the developed skills and complete the task to achieve the goal. **Evaluate and expand the experience, reward the outcome and discovery;** evaluate the performance by oneself, peer and coach, reward the discovery and give positive feedback to develop the task, lesson learned and expand the experience to develop the current and new tasks, reward the person who is satisfied with work and has quality work that meets the standard.

This aligns with the research of Emre (2016), who applied cloud technology to an Analysis and System Design course to prepare the new generation to be IT and system analysis experts. Therefore, he implemented the technology that involved online tools operating on the cloud to the curriculum of collaborative skills development by using Google Drive and Google Document as the tool to share and enhance collaborative skills and teamwork. It was concluded that using cloud learning in couple with traditional learning promoted both self-learning and collaborative learning. It was consistent with Srisomboon (2016), who developed a gamification learning system for virtual team collaborative learning via cloud technology. The findings illustrated that the teamwork skill of the students who applied the learning system with the developed gamification, from self-evaluation and from the teammates, was at a good level. It was consistent with Neramittagaphong and Rattanaphan (2017), who developed student potential through appreciative coaching and to create appreciative coaching's model for of Law students. The study were conducted by using in 4-D illustrate appreciative inquiry and coaching techniques by Heron's model. Then, analyzed the data from the students' responses and behavior observation in determining the coaching tools. The evaluation was comparable to the core of Kirkpatrick's approach. The study's results found that eight students had developed their potential after being coached.

## CONCLUSIONS

The author conducted this research following the procedure and steps by studying the primary information, relevant documents, and researches. All information was analyzed and synthesized, resulting in cloud computing, collaborative learning, and positive coaching synthesis. The author implemented collaborative learning concepts on a cloud computing system, applying positive coaching. Cloud learning is computing technology on an internet network to share the resources of multiple computers during the operation to be accessible from anywhere. The resources can increase or decrease depending on user demand. The application of Software as a Service as a tool for instructional management, by using the cloud to support the activities to connect the knowledge, would accelerate the collaborative and knowledge sharing to be more efficient.

Along with coaching from the teacher, the learner shall have in-depth knowledge and understanding, skills, and experience via learning. In this learning approach, the teacher should be well-prepared from

setting the learning objective and goal for the teaching design, preparing resources, teaching techniques and strategies, controlling the teaching and guiding the collaborative learning, and facilitating the learning. Since the author studied articles, documents, and research related to instructional management in the 21<sup>st</sup> Century with an advisor and educators, we viewed each component was significant for learner-based learning as they allowed the learner to develop naturally to their highest competence. The appropriate learning process was applied to the learners to encourage them to research and practice by using diverse media forms and resources. Therefore, instructional management based on collaborative learning on cloud computing by implementing the positive coaching approach to the undergraduate students was crucial to resolving instructional management problems. This was in line with learning in the digital era, where the learning model led to exploration and the use of digital knowledge. Knowledge on the cloud was the key to new education, in which the teaching and learning are focused on skills rather than the content. While the teacher educates, the students can check the information immediately by quickly and easily accessing cloud computing. This is in harmony with the Education 4.0 policy that allows learners to apply and integrate global knowledge from everywhere to develop innovations and fulfill social demands.

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