

Implementation of Collaborative Online International Learning Projects in the Development of Non-cognitive Skills

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Abstract

Amid the Covid-19 pandemic, when people's movements were restricted, Collaborative Online International Learning (COIL) attracted considerable attention as a way of promoting international exchange without thwarting globalization. In addition, the era of volatility, uncertainty, complexity, and ambiguity (VUCA), which is characterized by rapid change and an unpredictable future, is prevalent. Goals, motivation, interest, persistence, planning, and the ability to cooperate with others, which are related to non-cognitive skills, are required to survive in such a society. In this study, the significance of the COIL exchange with two universities in Taiwan is examined by focusing on three non-cognitive skills: self-efficacy, intrinsic motivation, and metacognitive strategies.

Keywords: COIL, non-cognitive skills, self-efficacy, intrinsic motivation, metacognitive strategies

1. Introduction

During the Covid-19 pandemic in 2020 and 2021, neither international nor Kochi University (KU) students were able to study abroad. Before the pandemic, this situation could not have been predicted because of increasing globalization and active international exchange.

In addition to the pandemic, the social environment has been changing rapidly because of factors such as natural disasters and advances in information and communication technology (ICT). In response to this dynamic situation, the notion of VUCA, an acronym that stands for volatility, uncertainty, complexity, and ambiguity, has become popular to explain various dimensions of our uncontrollable environment. Our society has become increasingly complex, making it difficult to analyze, respond to, predict, or plan for. Furthermore, there is a growing interest in non-cognitive skills as a means to foster the ability to survive in such a society. James Joseph Heckman, a Nobel Prize winner in economics, revealed that abilities or traits that cannot be easily measured by cognitive abilities, including intelligence quotient and academic achievement tests, play an important role and affect success and wealth in life (Benesse, 2021).

Accordingly, Collaborative Online International Learning (COIL) as a method to cultivate non-cognitive skills and enable active international exchange during the Covid-19 pandemic was examined in this study. Through COIL education employing ICT, students can acquire non-cognitive skills that are crucial in playing an active role in society, for example, thinking independently and taking initiative.

The significance of two COIL exchanges employing English with students from overseas partner universities who had different cultural backgrounds and spoke different languages was explored. First, the COIL project with Chinese Culture University (CCU) in Taipei City was initially implemented in 2015. In this project, KU students presented their specialities such as second language acquisition theory and language education in English, shared information, and exchanged opinions with overseas students who were studying in the same field. Second, COIL was first implemented with Tunghai University (TU) in Taichung City in 2019. Specifically, culture-related content was exchanged.

2. Academic Background of the Projects

In this section, COIL, a method of exchange between the two universities, and an overview of the non-cognitive skills needed to demonstrate competence in the era of VUCA are outlined.

2.1 The Significance of COIL

Learning a language, even online, can lead to an in-depth understanding of a wide variety of cultures and values. Many individuals' values are cultivated through the environment in which they were born and raised as well as by interacting with others from diverse cultural backgrounds. What was initially regarded as common sense may not be. Furthermore, by being exposed to completely different values, individuals may change their way of thinking and reject previously held stereotypes. Such experiences are believed to lead to tolerance and an acceptance of various ways of thinking. The significance of international exchange can be found not only in the acquisition of language but also tolerance for diversity. COIL is an effective method of enabling online exchange.

COIL is an online-based international interactive educational method that employs tools from the Internet and innovative online teaching methods to enable students and faculty interaction between geographically distant univer-

sities that are characterized by different languages and cultural backgrounds (TP COIL). COIL is thus online international collaborative teaching and learning that allows students to connect online and accordingly interact and collaborate in and outside the classroom, without actually visiting the site.

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) launched the *Inter-University Exchange Project*, which aimed to nurture global human resources to work on the international stage and strengthen the global development of university education (Japan Society for the Promotion of Science, 2022). In the 2008 budget, the MEXT provided focused financial support for projects to establish and implement programs with quality assurance by implementing COIL-type education with universities throughout the world, including the United States, as well as to enable projects to establish a platform. As can be seen from the above, COIL has been recommended. It provides students and faculties with meaningful opportunities to learn not only academic content but also cross-cultural communication and collaboration.

Both universities with which KU collaborated on this COIL exchange were from Taiwan. *World Englishes* refers to the English language as it is variously used throughout the world (Kachru, 1992). As globalization increases, it is expected that individuals who do not share the same native language will use English increasingly to communicate. In these COIL projects, it was significant to interact not with native English speakers but with Taiwanese students who were learning English as a second language in English as a foreign language (EFL) context. In addition, the exchange between individuals from different cultural backgrounds was an initiative characterized by a strong awareness of globalization.

2.2 The Significance of Non-cognitive Skills

Gutman and Schoon (2013) defined non-cognitive skills (Note 1) as “a set of attitudes, behaviors, and

strategies that are thought to underpin success in school and at work, such as motivation, perseverance, and self-control” (p. 1). These skills differ from the “hard skills” associated with cognitive abilities, such as literacy and numeracy, which are indicative of the raw ability to process information. Gutman and Schoon further identified eight factors as potential key non-cognitive skills. Their main findings are summarized in Table 1. They assess for each non-cognitive skill “(1) the robustness of measurement, (2) the malleability (i. e. , as determined by the average effect size of its improvement in experimental studies) , (3) the causal effect on other outcomes (i. e. , as determined by the average effect size shown in experimental studies) , and (4) the strength of the evidence” (Gutman & Schoon 2013, p. 40).

Table 1
Summary of Findings on Non-cognitive Skills
(Based on Gutman and Schoon, 2013, p. 40)

Non-cognitive Skills	(1)	(2)	(3)	(4)
1. Self-Perceptions				
–Self-Concept of Ability	H	M	NA	M
–Self-Efficacy	H	H	H	M
2. Motivation				
–Achievement Goal Theory	H	M	LM	M
–Intrinsic Motivation	H	M	LM	H
–Expectancy-Value Theory	M	NA	MH	M
3. Perseverance				
–Engagement	M	NA	NA	L
–Grit	M	NE	NE	L
4. Self-Control	M	LM	L	M
5. Metacognitive Strategies	M	MH	MH	H
6. Social Competencies				
–Leadership Skills	L	NA	NE	L
–Social Skills	M	MH	LM	H
7. Resilience and Coping	M	H	L	M
8. Creativity	M	NA	NE	L

Note. H: High, M: Medium, NA: Not available,
LM: Low to medium, NE: No evidence,
MH: Medium to high

An examination of the Table 1 reveals that three of the non-cognitive skills, namely, self-efficacy, intrinsic motivation, and metacognitive strategies are important to obtain good results.

Furthermore, the Japan Institute of Lifelong Learning (2019) proposed 16 non-cognitive abilities: problem-solving, critical thinking, collaboration, communication skills, initiative, self-management skills, self-affirmation, executive ability, leadership skills, creativity, inquisitiveness, empathy, morality, ethics, normative awareness, and public spiritedness. It is noteworthy that problem-solving and critical thinking skills are sometimes classified as cognitive abilities. From the perspective of the relationship among the elements of abilities, the elements of non-cognitive abilities are classified into three categories: new view of abilities (academic abilities) , values and human nature, and abilities that are demonstrated in the real world. The last three abilities include executive ability, leadership, and creativity.

3. COIL Exchange Overviews

In this section, two COIL projects that were implemented in 2021 are outlined. Zoom and Microsoft Teams as video conferencing tools were employed.

3.1 Project with Chinese Culture University

In previous exchanges, KU students had shared information and ideas as well as exchanged opinions with students from CCU related to specialized studies in second language acquisition (SLA). In 2021, while KU students presented the SLA content as previously, CCU students presented specific Content and Language Integrated Learning (CLIL) practices, which were slightly different from previous exchanges.

Ten second-year and ten third-year KU students, who were divided into five groups led by third-year students, participated in the exchange. Furthermore, 20 sophomores at CCU, who were also divided into five groups, participated in this exchange. The exchange started in early

November. The universities' groups, which were matched in advance, made arrangements with one another, decided on presentation themes, and prepared their presentations in English. Most of the work was conducted online because of the pandemic. The students worked cooperatively and systematically. The groups from KU interacted and had discussions with the CCU groups at least three times about self-introductions, the content of themes, progress reports, and the main presentation. After the final presentation, which was held on December 22, the students had a Q&A session to exchange information. KU's presentation themes included *Improving English Proficiency with the IIO Model* (Group 1), *Contrastive Analysis Hypothesis* (Group 2), *Input Hypothesis, Output Hypothesis, and Interaction Hypothesis* (Group 3), *About Learning Strategies* (Group 4), and *Usefulness of Small Talk in Foreign Language Classes* (Group 5).

Some of the students communicated via SNS messages after the exchange. Furthermore, some have continued to communicate with each other. They related they were able to enjoy conversations, broaden their views, and learn much from each other. Excerpts from the leaders' comments, which were originally written in Japanese but translated into English for this paper, are as follows.

· I have learned a great deal through this exchange with CCU. I find it valuable to experience presenting and conveying the content of SLA theory so that students at CCU can understand and become interested in it. I also think that my experience as a leader helped me to grow as a human being. Through this experience, I was able to understand the required skills for a leader such as coordinating group schedules, communication skills, and how to deal with problems when they arise. Other members of the group and the students at CCU helped me considerably. Moreover, I would like to use this experience to further improve my skills. Finally, I would like to thank all the members who helped me with the exchange.

· The group members were very cooperative, which made it possible to proceed smoothly with this exchange. We also received positive comments from the students at CCU with whom we interacted. CCU's presentation was a science lesson in English. I was able to learn much about English education in Taiwan through their presentation. We also had an active Q&A session. I would like to make the most of this experience when I become a leader in the next activity.



Figure 1 Student exchange with CCU

3. 2 Project with Tunghai University

The cultural exchange with TU, which started in 2019, was implemented again in 2021. In addition to improving their English language skills, the cross-cultural exchange afforded students opportunities to reflect on their change in values objectively, acquire the ability to appreciate diversity, and acquire a more in-depth understanding of their own country. The KU students who participated in the exchange included 10 sophomores and 11 juniors. They were divided into four groups led by third-year students as leaders. The TU students were also divided into four groups, which third-year students led. Each group had discussions with one another, decided on a theme, and prepared a presentation in English. The students met several times to complete tasks such as self-introductions and progress reports before the main presentation on June 8. Each group conducted their presentations effectively by using photos and had an enjoyable Q&A session. KU's topics included *Our*

Recommendations for Kochi Specialties (Group 1) , *Introducing Sightseeing Spots in Kochi* (Group 2) , *Introducing the Characteristics of Each Region* (Group 3) , and *Differences in Food Culture between Japan and Taiwan* (Group 4) .

The following are KU students' impressions after the exchange. The students' comments, which were originally written in Japanese but translated into English for this paper, included "Active communication in English gave me a lot of confidence," "It was good to have the opportunity to interact with people from overseas even during the Corona Disaster," "I felt a sense of accomplishment at the end of the exchange, even though I found it hard to prepare all the materials and give my presentation in English," "I realized the value of cooperating with each other to achieve our goals," "I really enjoyed communicating during the Q&A session after my presentation," "Presenting information clearly and effectively is a key skill in getting our messages across. Because I think that presentation skills are required in every field, I will try to improve my presentation skills more," and "I was able to deepen my understanding of different cultures. I made friends at TU through sharing information before and after the exchange."



Figure 2 Student exchange with TU

4. Exchange through COIL and Development of Non-cognitive Skills

In this section, the COIL projects are discussed and

reviewed concerning three factors, namely, self-efficacy, intrinsic motivation, and metacognitive strategies. Of the eight non-cognitive skills listed in Table 1, these factors were noted as important keys.

4.1 Perspective of Self-Efficacy

Bandura (1977) postulated that two factors influence whether or not someone engages in a particular behavior: outcome expectancy and self-efficacy. In other words, an individual's ability to achieve a goal or complete a task depends on whether they think they can do it, that is, their self-efficacy, and whether they think it will have good results, outcome expectancy.

Self-efficacy is an individual's belief that they can succeed at a particular task in the future (Bandura, 1977). Brophy (1998) noted the following:

Self-efficacy perceptions are judgements of one's performance capabilities in given achievement situations. These judgements can influence task choice and quality of task engagement. They are especially important in situations that contain novel, unpredictable, or possibly stressful features. People with a high sense of self-efficacy are likely to approach achievement situations with confidence and engage in tasks willingly and persistently. (p. 57)

One may deduce that self-efficacy is the belief that individuals will be able to accomplish their goals. Self-efficacy has important effects on the amount of effort individuals apply to a given task. While individuals with high levels of self-efficacy for a given task tend to be resilient and persistent even if they fall behind, those with low levels of self-efficacy for that task may disengage or avoid the situation. When self-efficacy is heightened, individuals have a sense that they can accomplish things. Moreover, they can resume their tasks, even when difficult problems arise. Even if their endeavors fail, they learn from their failures and apply them to their next actions.

Bandura (1977) proposed four major sources of self-efficacy: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. Furthermore, he argued that the source of performance accomplishments is particularly influential because they are based on personal mastery experiences:

Successes raise mastery expectations; repeated failures lower them, particularly if the mishaps occur early in the course of events. After strong efficacy expectations are developed through repeated success, the negative impact of occasional failures is likely to be reduced. (Bandura, 1997, p. 195)

Individuals are likely to engage in activities to the extent that they perceive themselves to be competent at such. Therefore, self-efficacy has important implications for motivation.

Concerning these two projects, all the students enjoyed a successful experience that was difficult but achievable (see section 2). As noted, the most effective way to build self-efficacy is through performance accomplishments. The students were able to set attainable goals for themselves, including what and how they would proceed with their work. In addition, they overcame the challenges involved in cooperating within their groups. They must experience challenges in pursuit of achieving goals and enjoy satisfying results. Consequently, it is imperative to provide opportunities for students in the future to enjoy successful experiences in which they can use their initiative to accomplish tasks, even though they may be difficult.

4.2 Perspective of Intrinsic Motivation

When individuals are motivated intrinsically, they are motivated by the activity itself, not the result. Even though achieving goals may be challenging and difficult as well as characterized by trial and error, individuals can perceive such as their source of sustenance. Subsequently, this

becomes the driving force for further tasks and efforts. Deci and Ryan (1985) thus explained intrinsic motivation:

Intrinsic motivation is in evidence whenever students' natural curiosity and interest energize their learning. When the educational environment provides optimal challenges, rich sources of stimulation, and a context of autonomy, this motivational wellspring of learning is likely to flourish. (p. 245)

As noted previously, intrinsic motivation refers to becoming engaged in a task or activity something because it is inherently interesting and/or enjoyable.

Ryan and Deci (2000) identified three fundamental psychological needs that promote intrinsic motivation: autonomy, competence, and relatedness. These needs are operative for all individuals and must be satisfied to develop, function optimally, and thrive. Intrinsic motivation encompasses completing an optimally challenging activity that is interesting and energized by basic psychological needs.

Optimal challenges are important to intrinsic motivation in that individuals are intrinsically motivated to execute optimal challenges because these tasks are generally extremely interesting, facilitate competence, and promote development. Ryan and Deci (2000) stated, "Although autonomy and competence supports are highly salient for producing variability in intrinsic motivation, a third factor, relatedness, also bears on its expression" (p. 71). They thus stressed the need for relationships as being of paramount importance.

The two COIL projects were examined from the perspective of these three psychological factors. First, autonomy affords individuals more internal choice over what to do and how to do it so as not to be driven by external pressure. In this project, the students were given the freedom to choose the theme, contents, and process of the presentation. One may assume they perceived that they

could act autonomously. They possibly possessed a tremendous sense of self-determination and of having the ability to control their processes and decisions. Second, the students exhibited and improved their competencies through this project. The content of the project, which was challenging, was rewarding and attainable. They wanted to accomplish the task, which would result in a higher skill level. Third, a relationship comprises the desire to accomplish tasks in cooperation with peers and to be recognized by others. They all believed that they had accomplished difficult tasks by cooperating. They perceived that the group had worked together to achieve better results than could have been achieved by individuals alone.

4.3 Perspective of Metacognitive Strategies

Fadel et al. (2015) asserted that “metacognition involves self-reflection on one’s current position, future goals, potential actions and strategies and results” (p. 146). Metacognition is associated with the ability of learners to monitor, plan, organize, and evaluate their learning.

Academic skills are classified into three categories in the *Courses of Study*: “knowledge and skills,” “ability to think, judge, and express,” and “ability to learn and humanity.” The MEXT describes the last category as an aspect related to metacognition, which includes the ability to grasp objectively and recognize one’s thoughts and actions. The development of metacognition is indispensable for realizing students’ independent, interactive, and in-depth learning. Furthermore, Hofer et al. (1998) asserted that “students’ metacognitive knowledge and use of metacognitive strategies can have an important influence upon their achievement” (p. 67). Zimmerman (2001) noted that metacognitive strategies are goal-oriented efforts employed to influence individuals’ learning behaviors and processes by focusing awareness on thinking and selecting, monitoring, and planning strategies that are most conducive to learning. In the preliminary stages before implementation, prudent planning is required, including goal setting,

arrangements for accomplishment, and time allocation. In other words, goals related to aspects such as themes, contents, materials, and time allotment for presentations are decided. If the project does not progress as planned, it is necessary to monitor and correct the course. In addition, individuals do not notice various aspects when thinking alone but become aware of them through interactions within the group. Interaction with others can promote metacognition, which is known as perspective-taking (Sannomiya, 2018). When communicating with others, it is essential to relativize and objectify one’s view of things rather than regard one’s view as absolute.

Conclusion

It is indisputable that not only cognitive abilities but also high non-cognitive abilities are required to demonstrate competence in the unpredictable VUCA era. In addition, in this global society, collaboration with people from diverse cultural backgrounds with different values is becoming increasingly important. Considering the students’ reflections or descriptions, it is obvious that they had learned various things through the implementation of COIL in English. Furthermore, through collaboration with overseas students in English by employing online tools, non-cognitive skills such as self-efficacy, intrinsic motivation, and metacognitive strategies were developed. This may lead to the practical development of skills that will be beneficial in society. The students were able to interact with each other not as native English speakers, but as students learning English as a second language, which stimulated their learning. It is of great significance to continue to implement improved international exchange in consultation with international universities.

References

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review*, 84, pp. 191-215. <https://citeseerx.ist.psu.edu/view->

- doc/download;jsessionid=F5EA561ECE34A9666DD5960154DC14A3?doi=10.1.1.315.4567&rep=rep1&type=pdf.
- Benesse (2021). *Hininchi nouryoku toha* [What is non-cognition?]. <https://benesse.jp/kosodate/202011/20201114-3.html>.
- Brophy, J. (1998). *Motivating students to learn*. McGraw-Hill.
- Deci, E. & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior*. Plenum Press.
- Fadel, C., Bialik, M., & Trilling, B. (2015). *Four-dimensional education: The competencies learners need to succeed*. Center for curriculum redesign.
- Gutman, L. M., & Schoon, I. (2013). *The impact of non-cognitive skills on outcomes for young people*. Education Endowment Foundation. <https://helmtraining.co.uk/wp-content/uploads/2017/03/Gutman-and-Schoon-Impact-of-non-cognitive-skills-on-outcomes-for-young-people-1.pdf>.
- Hofer, B. K., Yu, S. L., & Pintrich, P. R. (1998). Teaching college students to be self-regulated learners. In Schunk, D. H. & Zimmerman, B. J. (Eds.), *Self-regulated learning: From teaching to self-reflective practice*. pp. 57-85.
- Japan Institute of Lifelong Learning (2019). '*Hininchi nouryoku*' no gainenn ni kannsuru kousatsu [A study of the concept of 'non-cognitive abilities']. <https://www.shogai-soken.or.jp/research/non-cog-2019-2.pdf>.
- Japan Society for the Promotion of Science (2022), *Inter-University exchange project*. <https://www.jsps.go.jp/english/e-tenkairyoku/index.html>.
- Kachru, B. (1992). *World Englishes: Approaches, issues and resources*. *Language Teaching*, 25, pp. 1-14. <https://doi.org/10.1017/S0261444800006583>.
- MEXT. https://www.mext.go.jp/a_menu/koutou/kaikaku/sekai-tenkai/1408256.htm.
- OECD. *Social and emotional skills well-being, connectedness and success*. [https://www.oecd.org/education/school/UPDATED%20Social%20and%20Emotional%20Skills%20-%20Well-being,%20connectedness%20and%20success.pdf%20\(website\).pdf](https://www.oecd.org/education/school/UPDATED%20Social%20and%20Emotional%20Skills%20-%20Well-being,%20connectedness%20and%20success.pdf%20(website).pdf).
- Ryan, R. & Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being, *American Psychologist*, pp. 68-78. https://selfdeterminationtheory.org/SDT/documents/2000_RyanDeci_SDT.pdf.
- Sannomiya, M. (2018). *Metaninchi de manabu chikara wo takameru* [Enhancing the ability to learn through metacognition]. Kitadaiji Shobou.
- TP COIL. <http://www.tufs.ac.jp/tp-coil/outline/>.
- Zimmerman, B. J. (2001). Theories of self-regulated learning and academic achievement: An overview and analysis. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (2nd ed., pp. 1-38). Mahwah, NJ: Lawrence Erlbaum.
- Note 1.
The OECD refers to the skills deserving of non-cognitive abilities as "Social and Emotional Skills."
- Appendix
This is an excerpt from a leaflet produced after the exchanges.

