BUKTI KORESPONDENSI

Tusyanah

The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance

DAFTAR KEGIATAN KORESPONDENSI ARTIKEL JURNAL INTERNASIONAL BEREPUTASI

Judul Artikel : *The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance*

Nama Penulis : Tusyanah Tusyanah, Wijang Sakitri, Fransisca Rahmawati Indira, Ismiyati Ismiyati, dan Edy Suryanto

Nama Jurnal: International Journal of Sociology of Education

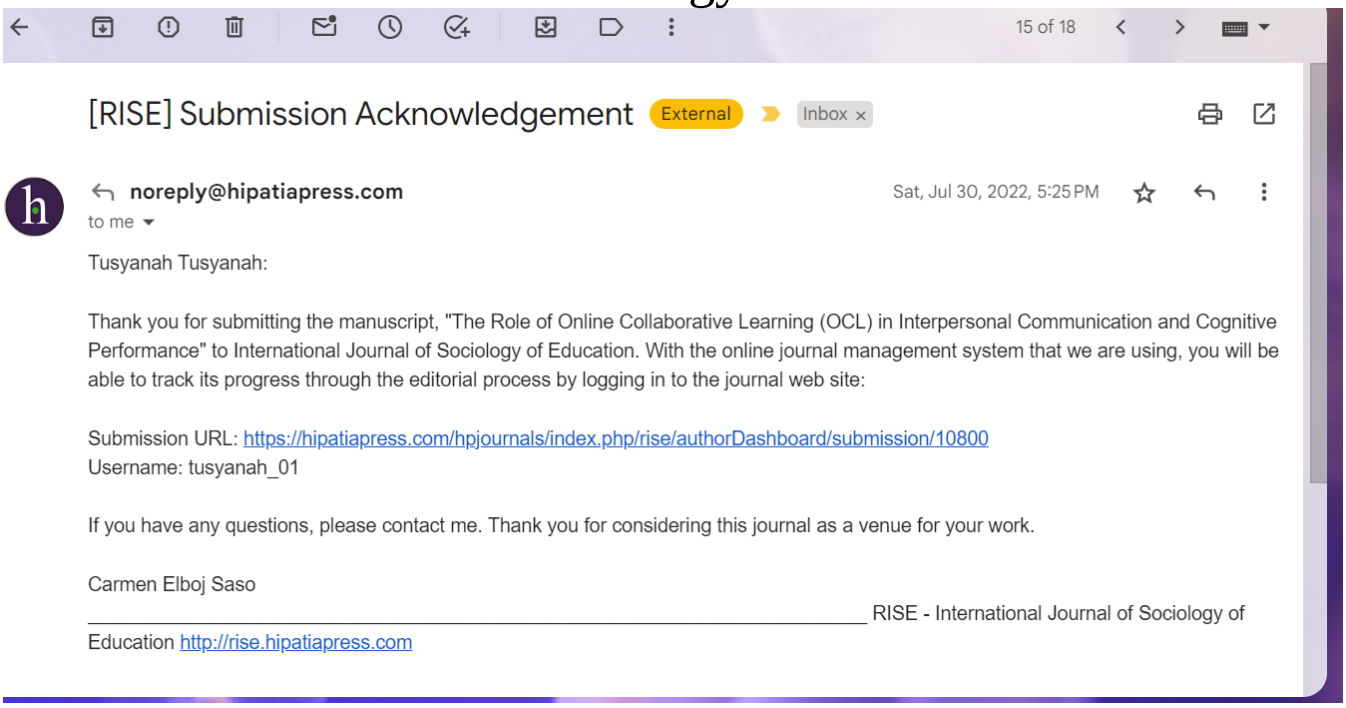
Indeksasi Jurnal : Scopus Q3 dengan SJR 0.35

No	**Kegiatan**	**Tanggal**
1.	Submit artikel dan artikel yang disubmit	30 Juli 2022
2.	Keputusan Editor (Minor-Revision)	3 Desember 2022
3.	Submit Hasil Revisi	15 Desember 2022
4.	Notifikasi revisi daftar pustaka	19 Januari 2023
5.	Perbaikan daftar pustaka dan layout	21 Januari 2023
6	Bukti konfirmasi bahwa artikel sudah terbit (published) secara online	25 February 2023

1. BUKTI *SUBMIT* ARTIKEL- 30 Juli 2022

1. SUBMIT ARTIKEL KE

International Journal of Sociology of Education



15 of 18

[RISE] Submission Acknowledgement External Inbox ×

noreply@hipatiapress.com Sat, Jul 30, 2022, 5:25 PM

to me

Tusyanah Tusyanah:

Thank you for submitting the manuscript, "The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance" to International Journal of Sociology of Education. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

Submission URL: https://hipatiapress.com/hpjournals/index.php/rise/authorDashboard/submission/10800
Username: tusyanah_01

If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

Carmen Elboj Saso

RISE - International Journal of Sociology of Education http://rise.hipatiapress.com

Artikel yang Disubmit

International Journal of Sociology of Education

Hipatia Press
www.hipatiapress.com

The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance

Abstract

Collaborative learning encourages students to collaborate among students; it is one of the four 21st-century skills suggested by UNESCO. Cognitive Performance (CP) and Interpersonal Communication (IC) are the themes in the research carried out in the Business English class at the Faculty of Economics, *Universitas Negeri Semarang* (UNNES), which implements Online Collaborative Learning (OCL). This research is a quantitative study with a population of FE UNNES students participating in Business English. The 680 population and 252 students were sampled and calculated using the *Slovin* formula with a margin of error of 5%. Data will be collected using questionnaires and analyzed with SEM-PLS. The study analyzed ten hypotheses, and the results were accepted. The results showed that all these hypotheses were accepted. Behavior in OCL as an independent variable had a direct positive and significant effect on IC by 65.8%, and the effect of behavior in OCL on CP was 74.7%. It means that OCL can be alternative learning to increase CP and IC. Educators can employ OCL in the classroom to improve students' CP and IC.

Keywords: Online Collaborative Learning (OCL), Cognitive Performance (CP), Interpersonal Communication (IC)

Título del artículo

Resumen

Todos los manuscritos han de incluir un resumen (abstract) de entre 150 y 200 palabras que exponga concisamente el motivo y objeto del artículo, la metodología empleada, los resultados más destacados y las principales conclusiones. También es necesario incluir entre tres y cinco palabras clave que definan la temática del artículo y permitan identificar el contenido del trabajo

Palabras clave:

Pandemic conditions make all activities carried out online, which leads the Ministry of Education and Culture, the Indonesian government encourages Educational Institutions to conduct teaching through various digital platforms. It is also a consideration for UNNES, one of the higher education institutions in Indonesia, to innovate to adapt to various changes in this era. UNNES in the academic field has made a breakthrough in implementing learning. It is stated in the regulation of the Rector of UNNES No B/4223/UN37/TU/2021. The regulation covers the changes in the implementation of learning and encourages lecturers to carry out project-based and case-based learning in the form of collaborative learning.

Collaborative learning encourages students to collaborate between students, as suggested by UNESCO. The collaborative learning model is expected to foster collaboration attitudes and habits from an early age. As Purwanto (2015) wrote that in the information age, a new work culture developed that was different from the industrial era; one of them is the ability to cooperate or collaborate.

In the learning process, students must achieve learning objectives covering three domains; i.e., cognitive, affective, and psychomotor. Those three domains must be developed during the learning process so that learning outcomes are more thorough and complete. The research was carried out in the Business English class at the Faculty of Economics, UNNES, since this class implements OCL, where students are given online teaching with various learning models that require students to collaborate.

The first theme in the study is CP. CP is usually the central assessment of a teacher for his students through the final exam by working on the questions by the essential competencies that have been taught (Zgheib et al., 2021). Another statement regarding CP is expressed by Yun et al. (2021). They state that cognitive learning is an effective way in which learners process basic or complex information from texts and instructions, including exercise, elaboration, organization, and critical thinking.

Online learning, common nowadays, is not a bad alternative to learning, as Zgheib et al. (2021) found that the rapid change from offline to online learning did not negatively affect student knowledge acquisition (Cognitive Performance). Then, research by Keskin (2019) regarding factors that affect student learning through online or blended learning in terms of motivation and cognitive suggests that students with high assignment scores, e-learning motivation, and self-efficacy prefer to learn in a blended learning environment. Furthermore, Yun et al. (2021) also found that the structural relationship between motivational regulation, cognitive learning, and academic performance in online learning in medical students in Korea shows the results that motivational regulation strategies are very influential in predicting students' cognitive learning which affects their learning performance for the better. Then, research by Ching et al. (2015) showed that mindfulness meditation courses for one semester could increase learning effectiveness and aspects of CP memory among Taiwanese students.

It means that online learning can affect the CP of students. There can be several alternative learning methods, such as collaborative, independent, project-based, and case-based.

Then the second theme is IC. This second theme needs to be developed because being a student means having the ability to recognize problems, find their impact and root causes, and identify solutions to overcome the problems faced. Identification of problems until problem resolution can be made together with good communication. IC can be interpreted as communication that, if directly carried out, gives rise to personal contact between communicators and communicants in which the purpose of IC is to affect others to change attitudes and views towards something (Alang, 2018). IC is inseparable from psychological relationships in which processes and mutual interactions occur. The most obvious examples are kinship relationships, relationships between teachers and pupils, co-workers, and relationships between someone who leads and is led (Shan et al., 2018).

The development of creativity and improving academic achievement in schools will experience obstacles if IC is hampered. It shows that teachers' efforts must develop students' understanding of the importance of IC and the factors that affect the low level of IC skills (Barseli et al., 2019). IC in teaching and learning activities is the presence of exchange behavior, expressed in emotional and material exchanges between teachers, students, and classmates (Shan et al., 2018).

Research on IC by Tuerah et al. (2019) found that IC positively affects teacher performance, meaning that good IC will improve teacher performance. Then, it is supported by research by Sadtyadi and Paramita (2022), which stated that the most influential factors in IC are motivation to communicate in the academic field, with a score of 0.81, and self-confidence, with a score of 0.67.

Then, Sukarna (2021) also suggests a positive and significant effect of IC skills on student learning outcomes. Therefore, students need to have good IC skills in OCL so that the development of creativity and improvement of academic achievement in schools do not experience obstacles.

Theory of Planned Behaviour (TPB)

Many studies have been carried out various studies related to CP and IC. Various theories have been implemented to measure the theme. One of the most frequently used theories is the TPB. The TPB is a further development of the Theory of Reasoned Action (TRA). Icek Ajzen initiated TPB in 1985 through his work entitled From Intention to Action: A Theory of Planned Behavior. SDGs are one of the theories that can be used to explain the behavior of someone who needs planning (Ajzen, 2005).

This theory states that a person's behavior results from a rational process directed towards a specific goal and a sequence of thinking. The action or behavior is based on each behavior's consideration, consequences, and outcome. They are evaluated, and ultimately a decision is made whether to act or not. Ajzen (2005) includes three background factors: personal, social, and information. Personal factors are a person's general attitude towards something, e.g., personality traits, values, emotions, and intelligence. Social factors include age, gender, race, ethnicity, education, income, and religion. The information factor is experience, knowledge, and media exposure.

Online Collaborative Learning (OCL)

Online learning "lies at the crossroads of distance education, human-computer interaction, instructional technology, and cognitive science" (Larreamendy-Joerns & Leinhardt, 2006). Collaborative learning is a learning environment in which individual learners support and add to the pool of knowledge that arises from a group, emphasizing peer relationships as learners work together to create learning communities (Moore & Kearsley, 2012). The term "collaborative learning" corresponds to Vygotsky's theory of learning (1978), specifically the zone of proximal development (ZPD), in which it is a common understanding can be developed during this learning process.

OCL is a situation where two or more people are learning or trying to learn something together online (Zoom, WhatsApp Group, Google Meet, and other applications that allow collaboration). Unlike learning alone, people involved in collaborative learning utilize each other's resources and skills. Hrastinski (2009) suggests that online learning is best achieved through collaboration and participation. Then this is also supported by three separate studies from 26 online courses at the New Jersey Institute of Technology that stipulate that participation in collaborative learning correlates with higher learning outcomes compared to those in traditional settings (Hiltz et al., 2000). OCL is related to behavioral belief, which is related to beliefs about the possibility of behavior occurring. When someone has confidence that he can take part in learning with the OCL system, it will cause an intention to take the OCL class well.

Interpersonal Communication (IC)

Proficiency in IC is a valuable thing in social life. Suranto (2011) stated that IC sends and receives messages between two people or a small group of people with feedback. IC also requires reciprocal actions between the actors involved in the communication. In other words, communicators exchange information, thoughts, and ideas. IC is a particular form of human communication that occurs when we interact simultaneously with others and affect each other (Qodriah & Rakhma, 2021).

Shan et al. (2018) stated that IC in learning activities could be formed by exchange behaviors, expressed in emotional and material exchanges between lecturers, students, and classmates. IC in the SDGs is included in the control belief, which is the belief that a behavior can be carried out over is entirely affected by the individual's control to act and the influencing factors. In the study, students' IC in learning activities through the OCL method can be fully controlled by the students acting, behaving, and communication with lecturers and classmates.

Cognitive Performance (CP)

Cognitive comes from the word cognition, which means to know, a broad sense that means the acquisition, organization, and use of knowledge (Mayangsari & Astuti, 2018). Cognitive is the ability to imagine and describe objects or events in memory and act according to those depictions (Desmita, 2010). Another opinion was put forward by Mayangsari & Astuti (2018), who posited that CP is a term used to describe all mental activities related to perception, mind and memory, and the processing of information that allows a person to acquire knowledge.

The level and quality of an individual's CP results from the interaction between three types of cognitive factors: (a) the storage of knowledge gained, (b) the ability to think, and (c) cognitive efficiency. Non-cognitive factors, described as facilitators-inhibitors, represent personality attributes such as motivation and extrinsic factors such as family support. Students' beliefs and beliefs strongly affect individual CP regarding their cognitive ability to complete tasks and projects with friends in OCL. In the study, the student's CP will increase when a person has good self-confidence and believes he can participate in OCL.

Methodology

Research Design

It is a quantitative study with a hypothesis-testing design that aims to analyze, describe, and obtain empirical evidence of the effect pattern between variables (Wahyudin, 2015). The study uses Structural Equation Modeling (SEM), a multivariate statistical analysis technique.

Research Sample

The study examines Economics students in Business English Class at the Faculty of Economics in UNNES, Indonesia. The number of students is 680. Samples were 252 students taken using the *Slovin* formula with a margin of error of 5%.

Research Instrument

Data are collected by distributing the questionnaires via Google form to students who study Business English utilizing OCL at Universitas Negeri Semarang. Data on online pedagogical practices and online teaching behavior can be revealed using instruments based on a Likert scale. The definition and indicators of the research instrument can be seen in Table 1.

Table 1.
Research Measurement

No.	Variable	The Operational Definition	Indicators/Measurement
1.	Interpersonal Communication (IC)	IC refers to the exchange of messages, verbal and nonverbal, between people, regardless of the relationship they share. Thus, IC includes exchanging messages in all sorts of relationships, from functional to casual to intimate (Guerrero, Andersen, & Afifi, 2007).	Self-Disclosure, Empathy, Social Relaxation, Assertiveness, Interaction Management, Altercentrism, Expressiveness, Supportiveness, Immediacy, and Environmental Control. (Rubin & Martin,1994)
2.	Cognitive Performance (CP)	CP is defined based on the cognitive domain recognized in cognitive psychology and current neuropsychological texts (Balota & Marsh, 2004; Lamberts & Goldstone, 2005; Lezak et al., 2004; Reisberg, 2006). These domains include information processing, accelerated performance, attention, knowledge and expertise,	Verbitskaya et al. (2015) measured students' CP through the results of the Unified State Exam. So we use learning outcomes like Daily tasks, mid-test, and final exams to measure CP. Author, 2022

		executive functions, and memory (Chang, 2012).	
3.	Perception of OCL	OCL means participants learn together in teams using information communication technology, particularly the Internet, as a mediating tool. Ng EMW (2012). In the study, the perception in question is from students' point of view in participating in OCL learning.	Learning Environment, Learning Design, Soft Skills, and Learning Interaction. Kiarie & Muindi (2020) & Razali et.al (2016)
4.	Behavior in OCL	Thus, *behavior* is defined as verbal speech (excluding verbal reports in the context of psychological judgment) or movements potentially available to careful observers using normal sensory processes. (Furr, 2009). In the study, the behavior is how students act while participating in OCL learning.	Sense, Feel, Think, ACT, and Relate Schmitt (1999)
5.	Intention in OCL	*Behavioral intention* is a proposition that relates oneself to an impending action. (Venkatesh et al., 2003). In the study, the desire in students to take various actions in OCL learning.	Intentions, Usage Predictions, and Plans (Venkatesh, 2003)

Results

Partial Least Square (PLS) Model Scheme

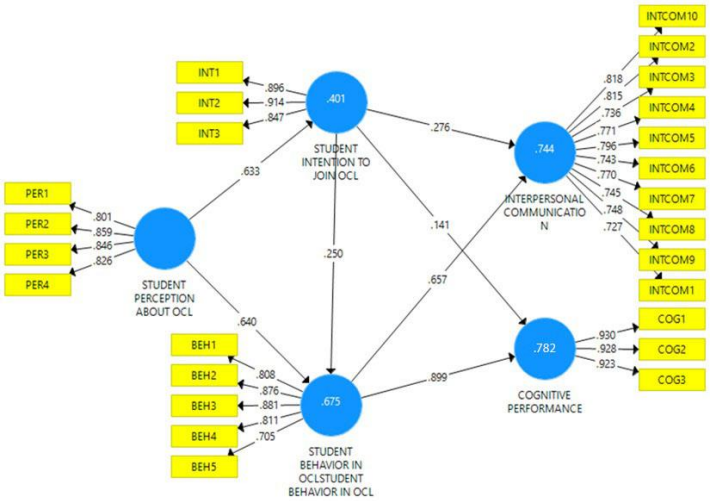


Figure 1. Outer Model Test Results

The outer model test results show the validity of the statements listed in the questionnaire. Convergent validity can be seen from the Average Variance Extracted (AVE) on research variables, as it is shown in Table 2.

Table 2.

Average Variance Extracted (AVE)

Variable	AVE Value	Result
IC (Y1)	0.589	Valid
CP (Y2)	0.818	Valid
Behavior in OCL (M1)	0.670	Valid
The intention in OCL (M2)	0.786	Valid
Perception of OCL (X)	0.694	Valid

Source: processed data, 2022

Table 2. shows that the AVE value of each research variable > 0.5 so that the research variable meets the role of thumb and is declared a good research construct. Outer models in Smart PLS version 3.0 also require reliability tests that can be seen through *Cronbach's alpha* and composite reliability. *Cronbach's alpha* is used to measure the lower limit of the reliability value of a construct. In comparison, composite reliability is used to measure the actual value of the reliability of a construct. The Rule of thumb of *Cronbach's alpha* and composite reliability > 0.7 (Abdillah & Hartono, 2015).

Table 3.

Cronbach's alpha dan Composite Reliability

Variable	Cronbach's Alpha	Composite Reliability	Result
IC (Y1)	0.922	0.964	Reliable
CP (Y2)	0.955	0.935	Reliable
Behavior in OCL (M1)	0.875	0.910	Reliable
The intention in OCL (M2)	0.864	0.917	Reliable
Perception of OCL (X)	0.853	0.901	Reliable

Source: processed data, 2022

Table 3. shows the Rule of thumb of *Cronbach's alpha* and composite reliability > 0.7 (Abdillah & Hartono, 2015:196). *Cronbach's alpha* and composite reliability have qualified. It means that it can be concluded that the overall research variables have a high level of reliability.

After analyzing the outer model, the next step is analyzing the inner model. The results of the inner model can be seen in Figure 2.

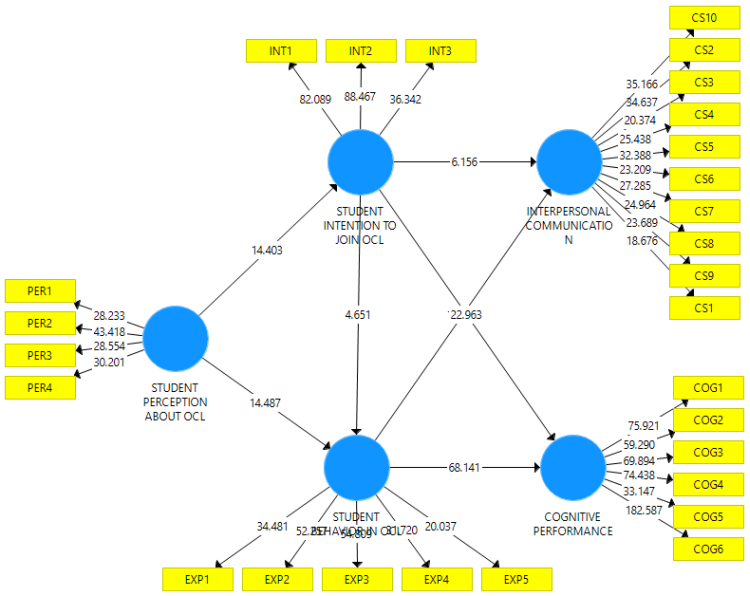


Figure 2. Inner Model Test Results

Table 4.

R Square Test Results (R2)

Variable	R Square	Adjusted R Square
IC (Y1)	0.744	0.742
CP (Y2)	0.782	0.78

Source: processed data, 2022

Table 4. shows that the magnitude of the R2 variables IC and Behavior in OCL is vital because the > 0.67. At the same time, CP in the category is powerful because the > 0.67 and close to 1. In contrast, Intention in OCL is in a low category. Furthermore, the significance of the path coefficient is seen from the t-statistic value of > 1.96 for the two-tailed hypothesis in the study and the t-statistic > t-table or p-value < 0.05 (Ghozali, 2014).

Structural models are tested to test the relationship between latent constructs. There are several tests for structural models; one is R Square on endogenous constructs (Sekaran & Bougie, 2016). According to Chin (1998), the R square values are 0.67 (strong), 0.33 (moderate) and 0.19 (weak).

The first structural model is that perception of OLC on IC through behavior in OCL has Adjusted-R Square 0.742 or 74.2%. It shows that this research model has a strong coefficient of determination. The value of R Square is the coefficient of determination on the endogenous construct.

Then, the second structural model is that perception of OLC on CP through behavior in OCL has Adjusted-R Square 0.99 or 99%. It shows that this research model has a strong coefficient of determination.

Table 5 and Table 6 show the direct and indirect effects of the variables analyzed by SEM-PLS.

Table 5.

Path Coefficient

	Variable	Original Sample (O)	T Statistic	P Values	Result
H1	Perception of OCL -> Intention in OCL	0.632	14,403	0.000	Accepted
H2	Perception of OCL -> Behavior in OCL	0.639	14,487	0.000	Accepted
H3	The intention in OCL -> Behavior in OCL	0.252	4,651	0.000	Accepted
H4	Intention in OCL -> IC	0.274	6,156	0.000	Accepted
H5	Intention in OCL -> CP	0.330	22,963	0.000	Accepted
H6	Behavior in OCL -> IC	0.658	17,421	0.000	Accepted
H7	Behavior in OCL -> CP	0.747	68,141	0.000	Accepted

Source: processed data, 2022

Table 6.

Specific Indirect Effect

	Variable	Original Sample (O)	T Statistic	P Values	Result
H8	Perception of OCL -> Intention in OCL -> Behavior in OCL	0.159	4,419	0.000	Accepted
H9	Intention in OCL -> Behavior in OCL -> CP	0.188	4,741	0.000	Accepted
H10	Intention in OCL -> Behavior in OCL -> IC	0.165	4,513	0.000	Accepted

Source: processed data, 2022

Discussion

Business English employs OCL as the method of study. The subject emphasizes the skills of writing and speaking English in a business context. In order for students to achieve those competencies, they must practice being able to speak and write in English. Therefore, the lecturer asked them to make videos, write articles, do other assignments related to these language skills, and upload them on the web blog. This web blog is collective, meaning that one group can submit these tasks in one blog managed by group members.

Furthermore, *collaborative learning* should be practiced because it is one of the dimensions of Indonesian students. Indonesian students should collaborate with various people from various backgrounds. When they collaborate, they can open up to upgrade themselves for the better.

The results showed that the ten hypotheses were accepted based on the results of the SEM-PLS analysis test. Structural models for both themes, IC and CP, can be strongly affected by endogenous variables. The coefficient of determination for IC is 0.74, while the coefficient for CP is 0.99.

Intention becomes an essential component as a driver for the creation of behavior. The study found that intention has a significant effect on IC. It means more students are interested in participating in OCL in the Business English course and will improve IC skills. The learning process in the Business English course emphasizes project-based learning. The project emphasizes students honing their ability to communicate in English properly and correctly. By providing various projects, students are expected to be able to communicate well and correctly. Students who intend to participate in OCL will be consciously and meaningfully encouraged to have IC skills.

Behavior that is carried out consciously will result in achievement. As found in the study, Behavior in OCL significantly affects CP and IC. It means the more students consciously have good behavior in OCL, the better their CP and IC skills will be.

However, the study also showed that indirect effects were smaller than direct effects but remained significant. It can be seen in table 7. The effect of mediating variable; behavior in OCL on CP and IC decreases the effect.

Table 7

Summary of Direct and Indirect Effects of Behavior in OCL

Variables	Direct Effects	Indirect Effects
Intention in OCL -> IC	27.4%	
Intention in OCL -> CP	33%	
Intention in OCL -> Behavior in OCL -> CP		18.8%
Intention in OCL -> Behavior in OCL -> IC		16.5%

Source: processed data, 2022

Both CP and IC get a more negligible effect by the Behavior in OCL if it is indirect. As we know, communication in learning activities can be formed by exchange behaviors, expressed in emotional and material exchanges between lecturers, students, and classmates (Shan et al., 2018). The direct effect of intention in OCL is more dominant than the indirect effect on IC through Behavior in OCL as it happens in CP.

Perception of OCL Has a Positive and Significant Effect on Intention in OCL

There is a positive and significant effect of perception of OCL on intention in OCL for 63.2%. It means that the H1 hypothesis is accepted. The study's results are consistent with previous research by Sugino (2021) and Muthuprasad et al. (2021), which stated that student perceptions affect the intention to participate in online learning. Students perceive OCL as a fun and flexible learning alternative that can be accessed online, so they intend to join OCL. The OCL conducted in the Business English class is that students are asked to collaborate on making presentations, creating texts, and creating web blogs for one semester. It challenges students to collaborate creatively to achieve CP and IC.

Perception of OCL Has a Positive and Significant Effect on Behavior in OCL

There is a positive and significant effect of perception of OCL on intention in OCL for 63.9%. It means that the H2 hypothesis is accepted. The study's results are consistent with previous research by Nur Agung & OP (2020) and Chang et al. (2017), which stated that student perceptions affect student behavior in the online learning process. Based on the study results, among students who participated in OCL, 63.9% were affected by their perception of OCL. Students perceive OCL as a fun and flexible learning alternative that can be accessed online so that they join OCL.

The Intention in OCL Has a Positive and Significant Effect on Behavior in OCL

Students' intention in the OCL affects 25.2% of their behavior to join the OCL. It means that the H3 hypothesis is accepted. The results of the study are consistent with previous studies, as found by Teo et al. (2019) and Sun & Gao (2020), which stated that intention affects behavior in learning activities.

The Intention in OCL Has a Positive and Significant Effect on Students' IC

There is a positive and significant effect of intention in OCL on Students' IC for 27.4%. The study's results are consistent with previous research, which found that students' intentions in online learning affect communication skills. Alalwan et al. (2019) found that intention affects students' communication skills in an online learning environment. Where the study more emphasis on the ability of students in IC.

The Intention in OCL Has a Positive and Significant Effect on Students' CP

There is a positive and significant effect of intention in OCL students' CP for 33%. Wongwatkit et al. (2020) found that intention affects learner performance, whereas CP is part of learner performance. Then, Alalwan et al. (2019) also stated that intention affects student academic performance. The study's results also strengthen

previous research emphasizing CP variables. Furthermore, from a human perspective, *CP* can be defined as the efficiency of task performance in a particular environment (Pattyn et al., 2008).

Behavior in OCL Has a Positive and Significant Effect on Students' IC

There is a positive and significant effect of student behavior on students' IC for 65.8%. This finding is also supported by a previous study by Putra & Patmaningrum (2018) that the behavior of students learning using YouTube can improve their ability to IC. Student's behavior and practice can affect their IC skills.

Behavior in OCL Has a Positive and Significant Effect on Students' CP

There is a positive and significant effect of student behavior on students' CP for 74.7%. Hossain et al. (2019) found that behavioral factors have a positive and significant effect on academic performance in which there is a CP component, whereas this research emphasizes CP as a result of the OCL learning process.

Students' experiences in their learning improve their CP skills. Learning Business English courses that emphasize more on the project-based learning process will make it easier for students to create understanding in themselves through various planned actions in the learning process that has been carried out.

Perception of OCL Has a Positive and Significant Effect on Behavior in OCL through Intention in OCL

There is a positive and significant effect of perception of OCL on Behavior in OCL through Intention in OCL for 15.9%. The study's results are consistent with previous research by Sugino (2021) and Muthuprasad et al. (2021), which stated that student perceptions affect the intention to participate in online learning. Teo et al. (2019) also suggest that intention affects behavior in learning activities.

The Intention in OCL Has a Positive and Significant Effect on Students' CP through Behavior in OCL

There is a positive and significant effect of intention in OCL on CP through behavior in OCL for 18.8% positive. The results of the study are consistent with previous research, as found by Teo et al. (2019), suggesting that intention affects behavior in learning activities. Then, Martaida et al. (2017), in their research on critical thinking and cognitive ability in learning, stated that cognitive ability could improve student behavior in the learning process.

The Intention in OCL Has a Positive and Significant Effect on Students' IC through Behavior in OCL

There is a positive and significant effect of intention in OCL on IC through behavior in OCL for 16.5%. The study results are consistent with previous research by Marcos & Coelho (2018), which states that communication has a significant and positive effect on student behavior intentions. Then supported by the research of Sadtyadi and Paramita (2022), the study's results stated that the most influential factor in IC is the motivation to communicate in the academic field with a score of 0.81. The motivation for communicating is encouraged because of the intention of the individual to participate in the OCL learning.

Conclusion and Recommendation

From the discussion, it can be concluded that endogenous variables can strongly affect the structural models for both IC and CP. The coefficient for IC is 0.744, and the coefficient for CP is 0.782. An interesting thing is about the mediating variable: Behavior in OCL. The direct effect is more than the indirect effect of the intention of OCL on both CP and IC. If the direct effect, the behavior in OCL has a positive and significant on IC by 65.8%, and the effect of behavior in OCL on CP is 74.7%. It is undoubtedly an alternative to learning that educators in the classroom may implement.

Based on the conclusions above, it can be suggested that educators be able to implement OCL as an alternative learning because when students experience OCL, it encourages and increases students' IC and CP. Furthermore, the next researcher is to add other variables that are thought to increase the effect on both themes: peer variables, learning environment, or internal variables such as emotional intelligence and intelligence.

References

Abdillah, W., & Hartono, J. (2015). Partial Least Square (PLS): Alternatif Structural Equation Modeling (SEM) dalam Penelitian Bisnis. Yogyakarta: Penerbit Andi

Ajzen, I. (2005). Attitudes, Personality, and Behavior (2nd ed.). New York: Open University Pres-Mc Graw- Hill Education.

Alalwan, N., Al-Rahmi, W. M., Alfarraj, O., Alzahrani, A., Yahaya, N., & Al-Rahmi, A. M. (2019). Integrated three theories to develop a model of factors affecting students' academic performance in higher education. IEEE Access, 7, 98725-98742. https://doi.org/10.1109/access.2019.2928142

Alang, S. (2018). Komunikasi Interpersonal Guru Dalam Meningkatkan Keaktifan Belajar Siswa Kelas X Jurusan Teknik Sepeda Motor di Smk Negeri 1 Parigi. Kinesik, 1(1): 1-11. http://garuda.ristekbrin.go.id/documents/ detail/1321791

Balota, D.A., Marsh, E.J. (Eds.), (2004). Cognitive Psychology: Key Readings. Psychology Press, New York.

Barseli, M., Sembiring, K., Ifdil, I., & Fitria, L. (2019). The concept of student IC. JPPI (Jurnal Penelitian Pendidikan Indonesia), 4(2), 129–134. https://doi.org/10.29210/02018259

Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modeling. *MIS quarterly*, vii-xvi.

Chang, Y. K., Labban, J. D., Gapin, J. I., & Etnier, J. L. (2012). The effects of acute exercise on CP: a meta-analysis. Brain Research, 1453, 87-101.

Chang, C.-T., Hajiyev, J., & Su, C.-R. (2017). Examining the students' behavioral intention to use e-learning in Azerbaijan? The General Extended Technology Acceptance Model for E-learning approach. Computers & Education, 111, 128 143. doi:10.1016/j.compedu.2017.04.01010.1016/j.compedu.2017.04.010

Ching, H., Koo, M., Tsai, T-H., and Chen, C-Y. (2015). Effects of a Mindfulness Meditation Course on Learning and CP among University Students in Taiwan. Hindawi Publishing Corporation Evidence-Based Complementary and Alternative Medicine. Volume 2015, Article ID 254358, 7 pages http://dx.doi.org/10.1155/2015/254358

Desmita. (2010). Psikologi perkembangan. Bandung: PT. Remaja Rosdakarya.

Furr, R. M. (2009). The study of behaviour in personality psychology: Meaning, importance and measurement. European Journal of Personality: Published for the European Association of Personality Psychology, 23(5), 437-453.

Ghozali, Imam. (2014). Structural Equation Modeling, Metode Alternatif dengan Partial Least Square (PLS), Edisi 4, Semarang: Badan Penerbit Universitas Diponegoro.

Guerrero, L. A., Andersen, P. A., & Afifi, W. A. (2007). Close encounters: Communication in relationships (2nd ed.). Thousand Oaks, CA: Sage

Hiltz, S. R., Coppola, N., Rotter, N., Turoff, M., & Benbunan-Fich, R. (2000). Measuring the importance of collaborative learning for the effectiveness of ALN: A multi-measure, multi-method approach. Journal of Asynchronous Learning Networks, 4(2), 103–125.

Hossain, S. F., Xi, Z., Nurunnabi, M., & Anwar, B. (2019). Sustainable academic performance in higher education: A mixed-method approach. Interactive Learning Environments, 30(4), 707-720. https://doi.org/10.1080/10494820.2019.1680392

Hrastinski, S. (2009). A theory of online learning as online participation. Computers & Education, 52, 78–82.

Keskin, S. (2019). Factors Affecting Students' Preferences for Online and Blended Learning: Motivational vs. Cognitive. European Distance and E-Learning Network. Retrieved from https://www.ceeol.com/search/article-detail?id=848342

Kiarie, C., & Muindi, B. (2020). Students' experiences and perceptions of OCL in two Kenyan universities. SOTL in the South. 4(2), 138-159.

Lamberts, K., Goldstone, R.L. (Eds.), (2005). The Handbook of Cognition. Sage, London.

Larreamendy-Joerns, J. & Leinhardt, G. (2006). Going the distance with online education. Review of Educational Research, 76(4), 567-605.

Lezak, M.D., Howieson, D.B., Loring, D.W., (2004). Neuropsychological assessment, fourth ed. Oxford University Press, New York.

Marcos, A. M. B. D. F., & Coelho, A. F. D. M. (2018). Communication relational outcomes in the insurance industry. Asia Pacific Journal of Marketing and Logistics, Volume 30 No. 5.

Martaida, T., Bukit, N., Eva, ;, & Ginting, M. (2017). The Effect of Discovery Learning Model on Student's Critical Thinking and Cognitive Ability in Junior High School. IOSR Journal of Research & Method in Education, 7(6), 1–08. https://doi.org/10.9790/73880706010108

Mayangsari, M, D., dan Astuti, J, P. (2018). Faktor Yang Mempengaruhi Kinerja Kognitif Pada Mahasiswa Di Tinjau Dari Pengaturan Ruang Kelas Factors Affecting CP On Students In The Review Of The Classrom Setting. Jurnal Ecopsy, Volume 5 Nomor 3, http://dx.doi.org/10.20527/ecopsy.v5i3.5568

Moore, M. G., & Kearsley, G. (2012). Distance education: A systems view of online learning. Belmont, CA: Wadsworth.

Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. Social Sciences & Humanities Open, 3(1), 100101. https://doi.org/10.1016/j.ssaho.2020.100101

Ng EMW (2012) OCL. In: Seel NM (ed) Encyclopedia of the Sciences of Learning. Springer, Boston, MA. https://doi.org/10.1007/978-1-4419-1428-6_459

Nur Agung, Surtikanti, & OP. (2020). Students' Perception of Online Learning during COVID-19 Pandemic: A Case Study on the English Students of STKIP Pamane Talino. Soshum: Jurnal Sosial Dan Humaniora, 10(2), 225-235. doi:10.31940/soshum.v10i2.1316

Pattyn, N., Neyt, X., Henderickx, D., & Soetens, E. (2008). A psychophysiological investigation of vigilance decrement: Boredom or cognitive fatigue? Physiology & Behavior, 93(1-2), 369-378. https://doi.org/10.1016/j.physbeh.2007.09.016

Purwanto, (2015). Pengembang Teknologi Pembelajaran: Kebutuhan Peluang dan Tantangan di Indonesia. Jakarta: Pustekkom Kemdikbud, Jurnal Teknodik Vol. 19 - Nomor 2, Agustus 2015.

Putra, A., & Patmaningrum, D. A. (2018). Pengaruh Youtube di Smartphone Terhadap Perkembangan Kemampuan Komunikasi Interpersonal Anak. *Jurnal Penelitian Komunikasi*, *21*(2).

Qodriah, L, and Rakhma, D. (2021). IC between Teachers and Students in Forming the Character of High School Students When the New Era Covid-19 is Normal in Tangerang District (Case Study of SMAN 30 Tangerang Regency). Budapest International Research and Critics Institute-Journal (BIRCI-Journal). Volume 4, No 4.

Razali, S., N, Shahbodin, F., Ahmad, M., H., & Noor, H., A., M. (2016). Measuring Validity and Reliability of Perception of OCL Questionnaire Using Rasch Model. International Journal on Advanced Science Engineering Information and Technology. Vol.6 (6).

Reisberg, D., (2006). Cognition: Exploring the Science of the Mind. W.W. Norton and Company, New York.

Rubin, R. B., & Martin, M. M. (1994). Development of a measure of IC competence. Communication Research Reports, 11(1), 33-44.

Sadtyadi, H., & Paramita, S. (2022). Analysis of Academic IC Factors in the Covid-19 Pandemic Period of Buddhist College Students. Journal of Educational and Social Research, 12(1), 144. https://doi.org/10.36941/jesr-2022-0013

Schmitt, B.H. (1999) Experiential Marketing. Journal of Marketing Management, 15, 53-67. http://dx.doi.org/10.1362/026725799784870496

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. john wiley & sons.

Shan, M., Wen-bo, Y., & Shan, M. (2018). College Students' IC from the Perspective of Social Exchange Theory. 1st International Conference on Contemporary Education and Economic Development (CEED 2018) College, 221(Ceed), 523–527. https://doi.org/10.2991/ceed-18.2018.101

Sugino, C. (2021). Student perceptions of a synchronous online cooperative learning course in a Japanese women's university during the COVID-19 pandemic. Education Sciences, 11(5), 1–19. https://doi.org/10.3390/educsci11050231

Sukarna, T., F. (2021). The Effect of Student's IC Skills on Student's Learning Outcomes In Mechanical Engineering Subject. Journal of Architectural Research and Education. Vol 3 (No.2). doi:10.17509/jare.v3i2.37402

Sun, Y., & Gao, F. (2020). An investigation of the effect of intrinsic motivation on students ' intention to use mobile devices in language learning. Educational Technology Research and Development, 68(3), 1181–1198. https://doi.org/10.1007/s11423-019-09733-9

Suranto, A. W. (2011). Komunikasi Interpersonal. Yogyakarta: Ar-Ruzz Media.

Teo, T., Zhou, M., Fan, A. C. W., & Huang, F. (2019). Factors that affect university students' intention to use Moodle: a study in Macau. Educational Technology Research and Development, 67(3), 749–766. https://doi.org/10.1007/s11423-019-09650-x

Tuerah, P., Pangalila, T., Najoan, M., & Korompis, E. (2019). Effects of IC; Work Ethic and Leadership Style towards Junior High School Teacher Performance in the City of Tomohon. Proceedings of the International Conference on Social Science 2019 (ICSS 2019), 383(Icss), 676–681. https://doi.org/10.2991/icss19.2019.94

Wahyudin, A. (2015). Metodologi Penelitian (Penelitian Bisnis & Pendidikan).

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 425-478.

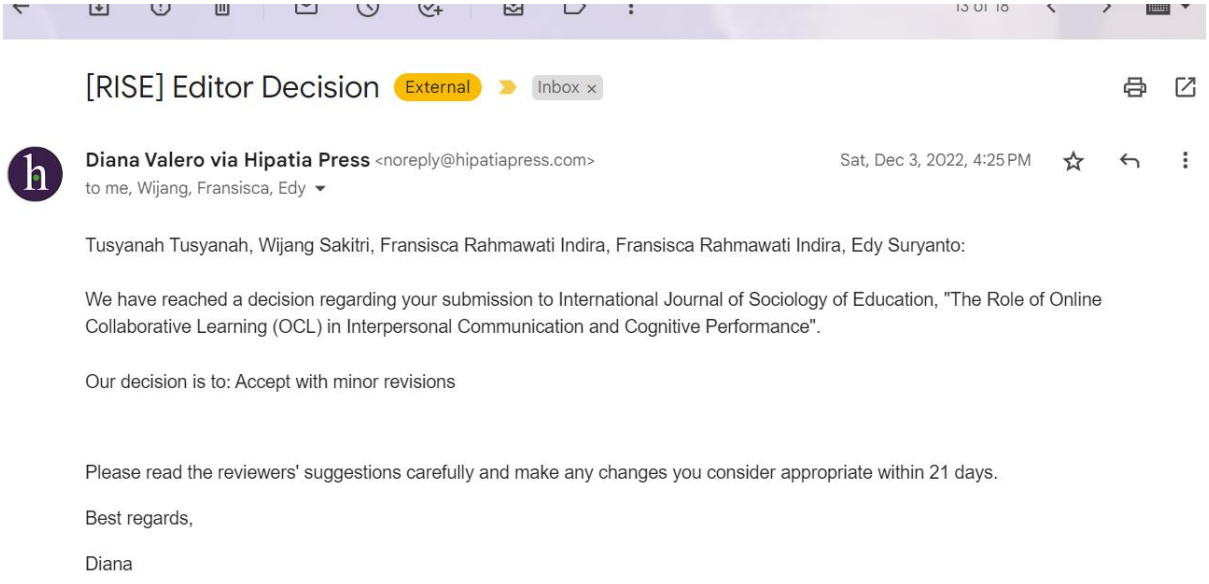
Vygotsky, L. (1978). Mind in society. Cambridge, MA: Harvard University Press.

Wongwatkit, C., Panjaburee, P., Srisawasdi, N., & Seprum, P. (2020). Moderating effects of gender differences on the relationships between perceived learning support, intention to use, and learning performance in a personalized E-lEarning. Journal of Computers in Education, 7(2), 229-255. https://doi.org/10.1007/s40692-020-00154-9

Yun, H., Kim, S., and Chung, E., K. (2021). Exploring the Structural Relationships between Medical Students' Motivational Regulation, Cognitive Learning, and Academic Performance in Online Learning. Korean Journal of Medical Education. 33 (2): 115-124. doi: 10.3946/kjme.2021.193

Zgheib, A., M., Ali, A., and Sabra, R. (2021). Experience with Forced Transition to Online Learning During The COVID-19 Pandemic: Students' CP and Their Perceptions of Teaching. The Asia Pacific Scholar, Vol. 6 No. 3. https://doi.org/10.29060/TAPS.2021-6-3/OA2377

2. Keputusan Editor (Minor-Revisions)



[RISE] Editor Decision External Inbox ×

Diana Valero via Hipatia Press <noreply@hipatiapress.com> Sat, Dec 3, 2022, 4:25 PM

to me, Wijang, Fransisca, Edy

Tusyanah Tusyanah, Wijang Sakitri, Fransisca Rahmawati Indira, Fransisca Rahmawati Indira, Edy Suryanto:

We have reached a decision regarding your submission to International Journal of Sociology of Education, "The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance".

Our decision is to: Accept with minor revisions

Please read the reviewers' suggestions carefully and make any changes you consider appropriate within 21 days.

Best regards,

Diana

Reviewer A:
Recommendation: Revisions Required

Importance of the subject*

4

Originality of the Approach*

4

Soundness of the Scholarship*

4

Degree of Interest to our Readership*

4

Clarity of the Organization*

5

Strength of the Argument*

5

Writing Style*

4

Recommendation*

Accept with minor revisions

Reviewer's comments (to be sent to the author)*

Congratulations, this is a good job that addresses a relevant issue today. However, I would recommend simple things like improving the introduction since it uses acronyms that are explained in the next section but the reader may not understand (IC...). Likewise, it is suggested to include a section that addresses ethics in research, that is, if an ethical committee was passed to carry it out, if consents were collected... For the rest, I consider it a good job.

Reviewer B:
Recommendation: Accept Submission

Importance of the subject*

4

Originality of the Approach*

4

Soundness of the Scholarship*

4

Degree of Interest to our Readership*

5

Clarity of the Organization*

4

Strength of the Argument*

4

Writing Style*

4

Recommendation*

Accept as it stands

Reviewer's comments (to be sent to the author)*

Dear Authors,
The paper addresses a promise of alternative learning to increase CP and IC which is the need of the hour, that said the paper is good work. I still do feel obliged to let

you know about some tiny grammatical errors that were found in the introductory paragraphs, please look into them.

Regards,

---

3. Submit hasil revisi

International Journal of Sociology of Education

Hipatia Press
www.hipatiapress.com

The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance

Abstract

Collaborative learning encourages students to collaborate among students; it is one of the four 21st-century skills suggested by UNESCO. Cognitive Performance (CP) and Interpersonal Communication (IC) are the themes in the research carried out in the Business English class at the Faculty of Economics, *Universitas Negeri Semarang* (UNNES), which implements Online Collaborative Learning (OCL). This research is a quantitative study with a population of FE UNNES students participating in Business English. The 680 population and 252 students were sampled and calculated using the *Slovin* formula with a margin of error of 5%. Data will be collected using questionnaires and analyzed with SEM-PLS. The study analyzed ten hypotheses, and the results were accepted. The results showed that all these hypotheses were accepted. Behavior in OCL as an independent variable had a direct positive and significant effect on IC by 65.8%, and the effect of behavior in OCL on CP was 74.7%. It means that OCL can be alternative learning to increase CP and IC. Educators can employ OCL in the classroom to improve students' CP and IC.

Keywords: Online Collaborative Learning (OCL), Cognitive Performance (CP), Interpersonal Communication (IC)

Título del artículo

Resumen

Todos los manuscritos han de incluir un resumen (abstract) de entre 150 y 200 palabras que exponga concisamente el motivo y objeto del artículo, la metodología empleada, los resultados más destacados y las principales conclusiones. También es necesario incluir entre tres y cinco palabras clave que definan la temática del artículo y permitan identificar el contenido del trabajo

Palabras clave:

Pandemic conditions make all activities carried out online, which leads the Ministry of Education and Culture; the Indonesian government encourages Educational Institutions to conduct teaching through various digital platforms. It is also a consideration for UNNES, one of the higher education institutions in Indonesia, to innovate to adapt to various changes in this era. UNNES, in the academic field, has made a breakthrough in implementing learning. It is stated in the regulation of the Rector of UNNES No B/4223/UN37/TU/2021. The regulation covers the changes in the implementation of learning and encourages lecturers to carry out project-based and case-based learning in the form of collaborative learning.

Collaborative learning encourages students to collaborate among students, as suggested by UNESCO. The collaborative learning model is expected to foster collaboration attitudes and habits from an early age. As Purwanto (2015) wrote that in the information age, a new work culture developed that was different from the industrial era; one of them is the ability to cooperate or collaborate. Collaborative learning will provide an essential experience for students. Yanto et al. (2018) stated that students need to improve communication and training skills as essential competencies that will be useful for graduates at work, especially when facing differences of opinion and perceptions with colleagues. The findings of Yanto et al. (2020) have also confirmed that students' communication skills shown from involvement have a positive and significant effect on negotiation skills, so collaborative processes in online learning may train communication and negotiation skills both with lecturers and other students in class.

In the learning process, students must achieve learning objectives covering three domains, i.e., cognitive, affective, and psychomotor. Those three domains must be developed during the learning process so that learning outcomes are more thorough and complete. The research was carried out in the Business English class at the Faculty of Economics, UNNES since this class implements Online Collaborative Learning (OCL), where students are given online teaching with various learning models that require students to collaborate.

The first theme in the study is Cognitive Performance (CP). CP is usually the central assessment of a teacher for his students through the final exam by working on the questions by the essential competencies that have been taught (Zgheib et al., 2021). Another statement regarding CP is expressed by Yun et al. (2021). They state that cognitive learning effectively processes basic or complex information from texts and instructions, including exercise, elaboration, organization, and critical thinking.

Online learning, common nowadays, is an excellent alternative to learning. Zgheib et al. (2021) found that the rapid change from offline to online learning did not negatively affect student knowledge acquisition (Cognitive Performance). Then, research by Keskin (2019) regarding factors that affect student learning through online or blended learning in terms of motivation and cognitive suggests that students with high assignment scores, e-learning motivation, and self-efficacy prefer to learn in a blended learning environment.

Furthermore, Yun et al. (2021) also studied the structural relationship between motivational regulation, cognitive learning, and academic performance in online learning in medical students in Korea. They found that motivational regulation strategies are very influential in predicting students'

cognitive learning, which improves their learning performance. Then, research by Ching et al. (2015) showed that mindfulness meditation courses for one semester could increase learning effectiveness and aspects of cognitive performance memory among Taiwanese students.

It means that online learning can affect students' cognitive performance. There can be several alternative learning methods, such as collaborative, independent, project-based, and case-based.

Then the second theme is Interpersonal Communication (IC). This second theme needs to be developed because being a student means having the ability to recognize problems, find their impact and root causes, and identify solutions to overcome the problems faced. Identification of problems until problem resolution can be made together with good communication. IC can be interpreted as communication that, if directly carried out, gives rise to personal contact between communicators and communicants. The purpose of IC is to affect others to change attitudes and views towards something (Alang, 2018). IC is inseparable from psychological relationships in which processes and mutual interactions occur. The most obvious examples are kinship relationships, relationships between teachers and pupils, co-workers, and relationships between someone who leads and is led (Shan et al., 2018).

The development of creativity and improving academic achievement in schools will experience obstacles if IC is hampered. It shows that teachers' efforts must develop students' understanding of the importance of IC and the factors that affect the low level of interpersonal communication skills (Barseli et al., 2019). Then, interpersonal communication in teaching and learning activities is the presence of exchange behavior, expressed in emotional and material exchanges between teachers, students, and classmates (Shan et al., 2018).

Research on IC by Tuerah et al. (2019) found that IC positively affects teacher performance, meaning that good IC will improve teacher performance. Then, it is supported by research by Sadtyadi and Paramita (2022), which stated that the most influential factors in IC are motivation to communicate in the academic field, with a score of 0.81, and self-confidence, with a score of 0.67.

Then, Sukarna (2021) also suggests a positive and significant effect of IC skills on student learning outcomes. Therefore, students need to have good IC skills in OCL so that the development of creativity and improvement of academic achievement in schools do not experience obstacles.

Theory of Planned Behaviour (TPB)

Many studies have been carried out in various studies related to CP and IC. Various theories have been implemented to measure the theme. One of the most frequently used theories is the TPB. The TPB further develops the Theory of Reasoned Action (TRA). Icek Ajzen initiated TPB in 1985 through his work entitled "From Intention to Action: A Theory of Planned Behavior"(Ajzen, 2005).

This theory states that a person's behavior results from a rational process directed towards a specific goal and a sequence of thinking. The action or behavior is based on each behavior's consideration, consequences, and outcome. They are evaluated, and ultimately a decision is made on whether to act. Ajzen (2005) includes three background factors: personal, social, and information.

Personal factors are a person's general attitude towards something, e.g., personality traits, values, emotions, and intelligence. Social factors include age, gender, race, ethnicity, education, income, and religion. The information factor is experience, knowledge, and media exposure.

Online Collaborative Learning (OCL)

Online learning lies at the crossroads of distance education, human-computer interaction, instructional technology, and cognitive science (Larreamendy-Joerns & Leinhardt, 2006). Collaborative learning is a learning environment in which individual learners support and add to the pool of knowledge that arises from a group, emphasizing peer relationships as learners work together to create learning communities (Moore & Kearsley, 2012). The term "collaborative learning" corresponds to Vygotsky's theory of learning (1978), specifically, the Zone of Proximal Development (ZPD), in which it is a common understanding can be developed during this learning process.

OCL is a situation where two or more people are learning or trying to learn something together online (Zoom, WhatsApp Group, Google Meet, and other applications that allow collaboration). Unlike learning alone, people involved in collaborative learning utilize each other's resources and skills. Hrastinski (2009) suggests that online learning is best achieved through collaboration and participation. Then this is also supported by three separate studies from 26 online courses at the New Jersey Institute of Technology that stipulate that participation in collaborative learning correlates with higher learning outcomes compared to those in traditional settings (Hiltz et al., 2000). OCL is related to behavioral belief, which is related to beliefs about the possibility of behavior occurring. When someone has confidence that he can take part in learning with the OCL system, it will cause an intention to take the OCL class well. Utami et al. (2022) found that collaborative learning allows students to provide feedback with various available media and be taught decision-making skills.

Interpersonal Communication (IC)

Proficiency in Interpersonal Communication (IC) is valuable in social life. Suranto (2011) stated that IC sends and receives messages between two people or a small group of people with feedback. IC also requires reciprocal actions between the actors involved in the communication. In other words, communicators exchange information, thoughts, and ideas. IC is a particular form of human communication that occurs when we interact simultaneously with others and affect each other (Qodriah & Rakhma, 2021).

Shan et al. (2018) stated that IC in learning activities could be formed by exchange behaviors expressed in emotional and material exchanges between lecturers, students, and classmates. IC in the SDGs is included in the control belief, which is the belief that a behavior can be carried out over is entirely affected by the individual's control to act and the influencing factors. In the study, students' IC in learning activities through the OCL method can be fully controlled by the students acting, behaving, and communicating with lecturers and classmates.

Cognitive Performance (CP)

Cognitive comes from the word cognition, which means to know, a broad sense that means the acquisition, organization, and use of knowledge (Mayangsari & Astuti, 2018). Cognitive is the ability to imagine and describe objects or events in memory and act according to those depictions (Desmita, 2010). Another opinion was put forward by Mayangsari & Astuti (2018), who posited that CP is a term used to describe all mental activities related to perception, mind, and memory and the processing of information that allows a person to acquire knowledge.

The level and quality of an individual's CP result from the interaction between three types of cognitive factors: (a) the storage of knowledge gained, (b) the ability to think, and (c) cognitive efficiency. Non-cognitive factors, described as facilitators-inhibitors, represent personality attributes such as motivation and extrinsic factors such as family support. Students' beliefs and beliefs strongly affect individual CP regarding their cognitive ability to complete tasks and projects with friends in OCL. In the study, the student's CP will increase when a person has good self-confidence and believes he can participate in OCL.

Methodology

Research Design

It is a quantitative study with a hypothesis-testing design that aims to analyze, describe, and obtain empirical evidence of the effect pattern between variables (Wahyudin, 2015). The study uses Structural Equation Modeling (SEM), a multivariate statistical analysis technique.

Research Sample

The study examines Economics students in Business English Class at the Faculty of Economics in UNNES, Indonesia. The number of students is 680. Samples were 252 students taken using the *Slovin* formula with a margin of error of 5%.

Research Instrument

Data are collected by distributing the questionnaires via Google form to Business English students utilizing OCL at *Universitas Negeri Semarang*. Data on online pedagogical practices and online teaching behavior can be revealed using instruments based on a *Likert* scale. The definition and indicators of the research instrument can be seen in Table 1.

Table 1.
Research Measurement

No.	Variable	The Operational Definition	Indicators/Measurement
1.	Interpersonal Communication (IC)	IC refers to the exchange of messages, verbal and nonverbal, between people, regardless of the	Self-Disclosure, Empathy, Social Relaxation, Assertiveness,

		relationship they share. Thus, IC includes exchanging messages in all sorts of relationships, from functional to casual to intimate (Guerrero, Andersen, & Afifi, 2007).	Interaction Management, Altercentrism, Expressiveness, Supportiveness, Immediacy, and Environmental Control. (Rubin & Martin,1994)
2.	Cognitive Performance (CP)	CP is defined based on the cognitive domain recognized in cognitive psychology and current neuropsychological texts (Balota & Marsh, 2004; Lamberts & Goldstone, 2005; Lezak et al., 2004; Reisberg, 2006). These domains include information processing, accelerated performance, attention, knowledge and expertise, executive functions, and memory (Chang, 2012).	Verbitskaya et al. (2015) measured students' CP through the results of the Unified State Exam. Then, we use learning outcomes like Daily tasks, mid-test, and final exams to measure CP. (Authors, 2022)
3.	Perception of OCL	OCL means participants learn together in teams using information communication technology, particularly the Internet, as a mediating tool. Ng EMW (2012). In the study, the perception in question is from students' point of view in participating in OCL learning.	Learning Environment, Learning Design, Soft Skills, and Learning Interaction. (Kiarie & Muindi, 2020) & (Razali et.al, 2016)
4.	Behavior in OCL	Behavior is defined as verbal speech (excluding verbal reports in the context of psychological judgment) or movements potentially available to careful observers using normal sensory processes. (Furr, 2009). In the study, the behavior is how students act while participating in OCL learning.	Sense, Feel, Think, ACT, and Relate (Schmitt, 1999)

5.	Intention in OCL	Behavioral intention is a proposition that relates oneself to an impending action. (Venkatesh et al., 2003). In the study, the desire in students to take various actions in OCL learning.	Intentions, Usage Predictions, and Plans (Venkatesh, 2003)

Results

Partial Least Square (PLS) Model Scheme

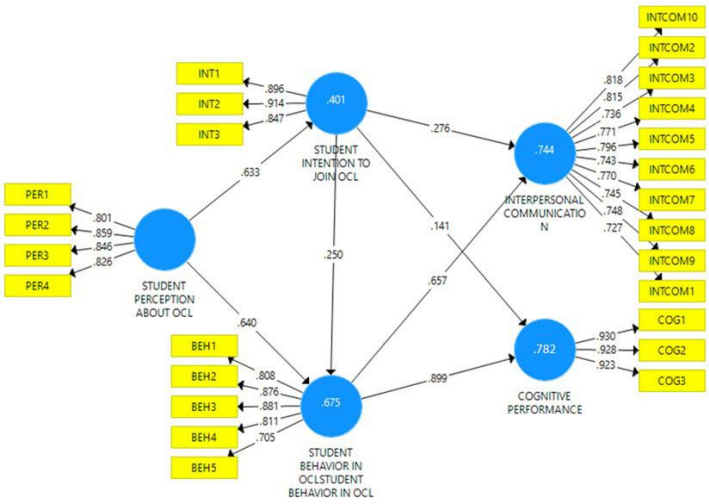


Figure 1. Outer Model Test Results

The outer model test results show the validity and reliability of the statements listed in the questionnaire. Convergent validity can be seen from the Average Variance Extracted (AVE) on research variables, as it is shown in Table 2.

Table 2.

Average Variance Extracted (AVE)

Variable	AVE Value	Result
IC (Y1)	0.589	Valid
CP (Y2)	0.818	Valid
Behavior in OCL (M1)	0.670	Valid

The intention in OCL (M2)	0.786	Valid
Perception of OCL (X)	0.694	Valid

Source: processed data, 2022

Table 2. shows that the AVE value of each research variable > 0.5 so that the research variable meets the role of thumb and is declared a good research construct. Outer models in Smart PLS version 3.0 also require reliability tests that can be seen through *Cronbach's alpha* and composite reliability. *Cronbach's alpha* is used to measure the lower limit of the reliability value of a construct. In comparison, composite reliability is used to measure the actual value of the reliability of a construct. The Rule of thumb of *Cronbach's alpha* and composite reliability > 0.7 (Abdillah & Hartono, 2015).

Table 3.

Cronbach's alpha dan Composite Reliability

Variable	Cronbach's Alpha	Composite Reliability	Result
Interpersonal Communication (Y1)	0.922	0.964	Reliable
Cognitive Performance(Y2)	0.955	0.935	Reliable
Behavior in OCL (M1)	0.875	0.910	Reliable
The intention in OCL (M2)	0.864	0.917	Reliable
Perception of OCL (X)	0.853	0.901	Reliable

Source: processed data, 2022

Table 3. shows the Rule of thumb of *Cronbach's alpha* and composite reliability > 0.7 (Abdillah & Hartono, 2015:196). *Cronbach's alpha* and composite reliability have qualified. The overall research variables have a high level of reliability.

After analyzing the outer model, the next step is analyzing the inner model. The results of the inner model can be seen in Figure 2.

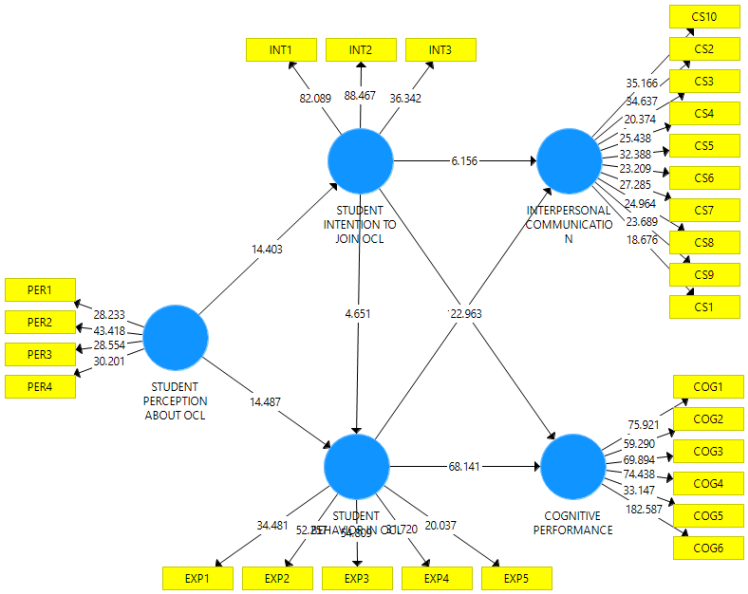


Figure 2. Inner Model Test Results

Table 4.

R-Square Test Results (R2)

Variables	R-Square	Adjusted R-Square
IC (Y1)	0.744	0.742
CP (Y2)	0.782	0.78

Source: processed data, 2022

Table 4. shows that the magnitude of the R2 variables IC and Behavior in OCL is vital because the > 0.67. At the same time, CP in the category is powerful because the > 0.67 and close to 1. In contrast, Intention in OCL is in a low category. Furthermore, the significance of the path coefficient is seen from the t-statistic value of > 1.96 for the two-tailed hypothesis in the study and the t-statistic > t-table or p-value < 0.05 (Ghozali, 2014).

Structural models are tested to test the relationship between latent constructs. There are several tests for structural models; one is R-Square on endogenous constructs (Sekaran & Bougie, 2016). According to Chin (1998), the R-square values are 0.67 (strong), 0.33 (moderate), and 0.19 (weak).

The first structural model is that perception of OLC on IC through behavior in OCL has Adjusted-R-Square 0.742 or 74.2%. It shows that this research model has a strong coefficient of determination. The value of R-Square is the coefficient of determination on the endogenous construct.

Then, the second structural model is that perception of OLC on CP through behavior in OCL has Adjusted-R-Square 0.99 or 99%. It shows that this research model has a strong coefficient of determination.

Table 5 and Table 6 show the direct and indirect effects of the variables analyzed by SEM-PLS.

Table 5.

Path Coefficient

	Variables	Original Sample (O)	T-Statistic	P-values	Result
H1	Perception of OCL -> Intention in OCL	0.632	14.403	0.000	Accepted
H2	Perception of OCL -> Behavior in OCL	0.639	14.487	0.000	Accepted
H3	The intention in OCL -> Behavior in OCL	0.252	4.651	0.000	Accepted
H4	The intention in OCL -> IC	0.274	6.156	0.000	Accepted
H5	The intention in OCL -> CP	0.330	22.963	0.000	Accepted
H6	Behavior in OCL -> IC	0.658	17.421	0.000	Accepted
H7	Behavior in OCL -> CP	0.747	68.141	0.000	Accepted

Source: processed data, 2022

Table 6.

Specific Indirect Effect

Variable	Original Sample (O)	T-Statistic	P-Values	Results

H8	Perception of OCL -> Intention in OCL -> Behavior in OCL	0.159	4.419	0.000	Accepted
H9	The intention in OCL -> Behavior in OCL -> CP	0.188	4.741	0.000	Accepted
H10	The intention in OCL -> Behavior in OCL -> IC	0.165	4.513	0.000	Accepted

Source: processed data, 2022

Discussion

Business English employs OCL as the method of study. The subject emphasizes the skills of writing and speaking English in a business context. In order for students to achieve those competencies, they must practice being able to speak and write in English. Therefore, the lecturer asked them to make videos, write articles, do other assignments related to these language skills, and upload them on the web blog. This web blog is collective, meaning that one group can submit these tasks in one blog managed by group members.

Furthermore, collaborative learning should be practiced because it is one of the dimensions of Indonesian students. Indonesian students should collaborate with various people from various backgrounds. When they collaborate, they can open up to improve themselves.

The results showed that the ten hypotheses were accepted based on the results of the SEM-PLS analysis test. Structural models for both themes, IC and CP, can be strongly affected by endogenous variables. The coefficient of determination for IC is 0.74, while the coefficient for CP is 0.99.

Intention becomes an essential component as a driver for the creation of behavior. The study found that intention has a significant effect on IC. It means more students are interested in participating in OCL in the Business English course and will improve IC skills. The learning process in the Business English course emphasizes project-based learning. The project emphasizes students honing their ability to communicate in English properly and correctly. By providing various projects, students are expected to be able to communicate well and correctly. Students who intend to participate in OCL will be consciously and meaningfully encouraged to have IC skills.

Behavior that is carried out consciously will result in achievement. As found in the study, Behavior in OCL significantly affects CP and IC. It means the more students consciously have good behavior in OCL, the better their CP and IC skills will be.

However, the study also showed that indirect effects were smaller than direct effects but remained significant. It can be seen in table 7. The effect of mediating variable; behavior in OCL on CP and IC decreases the effect.

Table 7

Summary of Direct and Indirect Effects of Behavior in OCL

Variables	Direct Effects	Indirect Effects
The intention in OCL -> IC	27.4%	
The intention in OCL -> CP	33%	
The intention in OCL -> Behavior in OCL -> CP		18.8%
The intention in OCL -> Behavior in OCL -> IC		16.5%

Source: processed data, 2022

Both CP and IC get a more negligible effect by the Behavior in OCL if it is indirect. As we know, communication in learning activities can be formed by exchange behaviors expressed in emotional and material exchanges between lecturers, students, and classmates (Shan et al., 2018). The direct effect of intention in OCL is more dominant than the indirect effect on IC through Behavior in OCL as it happens in CP.

Perception of OCL Has a Positive and Significant Effect on Intention in OCL

There is a positive and significant effect of perception of OCL on intention in OCL for 63.2%. It means that the H1 hypothesis is accepted. The study's results are consistent with previous research by Sugino (2021) and Muthuprasad et al. (2021), which stated that student perceptions affect the intention to participate in online learning. Students perceive OCL as a fun and flexible learning alternative that can be accessed online, so they intend to join OCL. The OCL conducted in the Business English class is that students are demanded to collaborate on making presentations, creating texts, and creating web blogs for one semester. It challenges students to collaborate creatively to achieve CP and IC.

Perception of OCL Has a Positive and Significant Effect on Behavior in OCL

There is a positive and significant effect of perception of OCL on intention in OCL for 63.9%. It means that the H2 hypothesis is accepted. The study's results are consistent with previous research by Nur Agung & OP (2020) and Chang et al. (2017), which stated that student perceptions affect student behavior in the online learning process. Based on the study results, among students who participated in OCL, 63.9% were affected by their perception of OCL. Students perceive OCL as a fun and flexible learning alternative that can be accessed online, so they join OCL.

The Intention in OCL Has a Positive and Significant Effect on Behavior in OCL

Students' intention in the OCL affects 25.2% of their behavior to join the OCL. It means that the H3 hypothesis is accepted. The results of the study are consistent with previous studies, as found by Teo et al. (2019) and Sun & Gao (2020), which stated that intention affects behavior in learning activities.

The Intention in OCL Has a Positive and Significant Effect on Students' IC

There is a positive and significant effect of intention in OCL on Students' IC for 27.4%. The study's results are consistent with previous research, which found that students' intentions in online learning affect communication skills. Alalwan et al. (2019) found that intention affects students' communication skills in an online learning environment.

The Intention in OCL Has a Positive and Significant Effect on Students' CP

There is a positive and significant effect of intention in OCL students' CP for 33%. Wongwatkit et al. (2020) found that intention affects learner performance, whereas CP is part of learner performance. Then, Alalwan et al. (2019) also stated that intention affects student academic performance. The study's results also strengthen previous research emphasizing CP variables. Furthermore, from a human perspective, *CP* can be defined as the efficiency of task performance in a particular environment (Pattyn et al., 2008).

Behavior in OCL Has a Positive and Significant Effect on Students' IC

There is a positive and significant effect of student behavior on students' IC for 65.8%. This finding is also supported by a previous study by Putra & Patmaningrum (2018) that the behavior of students

learning using YouTube can improve their ability to IC. Students' behavior and practice can affect their IC skills.

Behavior in OCL Has a Positive and Significant Effect on Students' CP

There is a positive and significant effect of student behavior on students' CP for 74.7%. Hossain et al. (2019) found that behavioral factors have a positive and significant effect on academic performance in which there is a CP component. In contrast, this research emphasizes CP due to the OCL learning process.

Students' experiences in their learning improve their CP skills. Learning Business English courses that emphasize more on the project-based learning process will make it easier for students to create understanding in themselves through various planned actions in the learning process that has been carried out.

Perception of OCL Has a Positive and Significant Effect on Behavior in OCL through Intention in OCL

There is a positive and significant effect of perception of OCL on Behavior in OCL through Intention in OCL for 15.9%. The study's results are consistent with previous research by Sugino (2021) and Muthuprasad et al. (2021), which stated that student perceptions affect the intention to participate in online learning. Teo et al. (2019) also suggest that intention affects behavior in learning activities.

The Intention in OCL Has a Positive and Significant Effect on Students' CP through Behavior in OCL

There is a positive and significant effect of intention in OCL on CP through behavior in OCL for 18.8% positive. The results of the study are consistent with previous research, as found by Teo et al. (2019), suggesting that intention affects behavior in learning activities. Then, Martaida et al. (2017), in their research on critical thinking and cognitive ability in learning, stated that cognitive ability could improve student behavior in the learning process.

The Intention in OCL Has a Positive and Significant Effect on Students' IC through Behavior in OCL

There is a positive and significant effect of intention in OCL on IC through behavior in OCL for 16.5%. The study results are consistent with previous research by Marcos & Coelho (2018), which states that communication has a significant and positive effect on student behavior intentions. Then supported by the research of Sadtyadi and Paramita (2022), the study's results stated that the most influential factor in IC is the motivation to communicate in the academic field, with a score of 0.81. The motivation for communicating is encouraged because of the intention of the individual to participate in the OCL learning.

Conclusion and Recommendation

From the discussion, endogenous variables can strongly affect the structural models for both IC and CP. The coefficient for IC is 0.744, and the coefficient for CP is 0.782. An interesting thing is about the mediating variable: Behavior in OCL. The direct effect is more than the indirect effect of the intention of OCL on both CP and IC. If the direct effect, the behavior in OCL has a positive and significant on IC by 65.8%, and the effect of behavior in OCL on CP is 74.7%. It is undoubtedly an alternative to learning that educators in the classroom may implement.

Based on the conclusions above, it can be suggested that educators be able to implement OCL as an alternative learning because when students experience OCL, it encourages and increases students' IC and CP. Furthermore, the next researcher adds other variables expected to increase the effect on both themes: peer variables, learning environment, or internal variables such as emotional intelligence and intelligence.

References

Abdillah, W., & Hartono, J. (2015). Partial Least Square (PLS): Alternatif Structural Equation Modeling (SEM) dalam Penelitian Bisnis. Yogyakarta: Penerbit Andi

Ajzen, I. (2005). Attitudes, Personality, and Behavior (2nd ed.). New York: Open University Pres-Mc Graw- Hill Education.

Alalwan, N., Al-Rahmi, W. M., Alfarraj, O., Alzahrani, A., Yahaya, N., & Al-Rahmi, A. M. (2019). Integrated three theories to develop a model of factors affecting students' academic performance in higher education. IEEE Access, 7, 98725-98742. https://doi.org/10.1109/access.2019.2928142

Alang, S. (2018). Komunikasi Interpersonal Guru Dalam Meningkatkan Keaktifan Belajar Siswa Kelas X Jurusan Teknik Sepeda Motor di Smk Negeri 1 Parigi. Kinesik, 1(1): 1-11. http://garuda.ristekbrin.go.id/documents/ detail/1321791

Balota, D.A., Marsh, E.J. (Eds.), (2004). Cognitive Psychology: Key Readings. Psychology Press, New York.

Barseli, M., Sembiring, K., Ifdil, I., & Fitria, L. (2019). The concept of student IC. JPPI (Jurnal Penelitian Pendidikan Indonesia), 4(2), 129–134. https://doi.org/10.29210/02018259

Chang, C.-T., Hajiyev, J., & Su, C.-R. (2017). Examining the students' behavioral intention to use e-learning in Azerbaijan? The General Extended Technology Acceptance Model for E-learning approach. Computers & Education, 111, 128 143. doi:10.1016/j.compedu.2017.04.01010.1016/j.compedu.2017.04.010

Chang, Y. K., Labban, J. D., Gapin, J. I., & Etnier, J. L. (2012). The effects of acute exercise on CP: a meta-analysis. Brain Research, 1453, 87-101.

Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modeling. *MIS quarterly*, vii-xvi.

Ching, H., Koo, M., Tsai, T-H., & Chen, C-Y. (2015). Effects of a Mindfulness Meditation Course on Learning and CP among University Students in Taiwan. Hindawi Publishing Corporation Evidence-Based Complementary and Alternative Medicine. Volume 2015, Article ID 254358, 7 pages http://dx.doi.org/10.1155/2015/254358

Desmita. (2010). Psikologi perkembangan. Bandung: PT. Remaja Rosdakarya.

Furr, R. M. (2009). The study of behaviour in personality psychology: Meaning, importance and measurement. European Journal of Personality: Published for the European Association of Personality Psychology, 23(5), 437-453.

Ghozali, Imam. (2014). Structural Equation Modeling, Metode Alternatif dengan Partial Least Square (PLS), Edisi 4, Semarang: Badan Penerbit Universitas Diponegoro.

Guerrero, L. A., Andersen, P. A., & Afifi, W. A. (2007). Close encounters: Communication in relationships (2nd ed.). Thousand Oaks, CA: Sage

Hiltz, S. R., Coppola, N., Rotter, N., Turoff, M., & Benbunan-Fich, R. (2000). Measuring the importance of collaborative learning for the effectiveness of ALN: A multi-measure, multi-method approach. Journal of Asynchronous Learning Networks, 4(2), 103–125.

Hossain, S. F., Xi, Z., Nurunnabi, M., & Anwar, B. (2019). Sustainable academic performance in higher education: A mixed-method approach. Interactive Learning Environments, 30(4), 707-720. https://doi.org/10.1080/10494820.2019.1680392

Hrastinski, S. (2009). A theory of online learning as online participation. Computers & Education, 52, 78–82.

Keskin, S. (2019). Factors Affecting Students' Preferences for Online and Blended Learning: Motivational vs. Cognitive. European Distance and E-Learning Network. Retrieved from https://www.ceeol.com/search/article-detail?id=848342

Kiarie, C., & Muindi, B. (2020). Students' experiences and perceptions of OCL in two Kenyan universities. SOTL in the South. 4(2), 138-159.

Lamberts, K., Goldstone, R.L. (Eds.), (2005). The Handbook of Cognition. Sage, London.

Larreamendy-Joerns, J. & Leinhardt, G. (2006). Going the distance with online education. Review of Educational Research, 76(4), 567-605.

Lezak, M.D., Howieson, D.B., Loring, D.W., (2004). Neuropsychological assessment, fourth ed. Oxford University Press, New York.

Marcos, A. M. B. D. F., & Coelho, A. F. D. M. (2018). Communication relational outcomes in the insurance industry. Asia Pacific Journal of Marketing and Logistics, Volume 30 No. 5.

Martaida, T., Bukit, N., Eva, ;, & Ginting, M. (2017). The Effect of Discovery Learning Model on Student's Critical Thinking and Cognitive Ability in Junior High School. IOSR Journal of Research & Method in Education, 7(6), 1–08. https://doi.org/10.9790/73880706010108

Mayangsari, M, D., dan Astuti, J, P. (2018). Faktor Yang Mempengaruhi Kinerja Kognitif Pada Mahasiswa Di Tinjau Dari Pengaturan Ruang Kelas Factors Affecting CP On Students In The Review Of The Classrom Setting. Jurnal Ecopsy, Volume 5 Nomor 3, http://dx.doi.org/10.20527/ecopsy.v5i3.5568

Moore, M. G., & Kearsley, G. (2012). Distance education: A systems view of online learning. Belmont, CA: Wadsworth.

Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. Social Sciences & Humanities Open, 3(1), 100101. https://doi.org/10.1016/j.ssaho.2020.100101

Ng EMW (2012) OCL. In: Seel NM (ed) Encyclopedia of the Sciences of Learning. Springer, Boston, MA. https://doi.org/10.1007/978-1-4419-1428-6_459

Nur Agung, Surtikanti, & OP. (2020). Students' Perception of Online Learning during COVID-19 Pandemic: A Case Study on the English Students of STKIP Pamane Talino. Soshum: Jurnal Sosial Dan Humaniora, 10(2), 225-235. doi:10.31940/soshum.v10i2.1316

Pattyn, N., Neyt, X., Henderickx, D., & Soetens, E. (2008). A psychophysiological investigation of vigilance decrement: Boredom or cognitive fatigue? Physiology & Behavior, 93(1-2), 369-378. https://doi.org/10.1016/j.physbeh.2007.09.016

Purwanto, (2015). Pengembang Teknologi Pembelajaran: Kebutuhan Peluang dan Tantangan di Indonesia. Jakarta: Pustekkom Kemdikbud, Jurnal Teknodik Vol. 19 - Nomor 2, Agustus 2015.

Putra, A., & Patmaningrum, D. A. (2018). Pengaruh Youtube di Smartphone Terhadap Perkembangan Kemampuan Komunikasi Interpersonal Anak. *Jurnal Penelitian Komunikasi*, *21*(2).

Qodriah, L, and Rakhma, D. (2021). IC between Teachers and Students in Forming the Character of High School Students When the New Era Covid-19 is Normal in Tangerang District (Case Study of SMAN 30 Tangerang Regency). Budapest International Research and Critics Institute-Journal (BIRCI-Journal). Volume 4, No 4.

Razali, S., N, Shahbodin, F., Ahmad, M., H., & Noor, H., A., M. (2016). Measuring Validity and Reliability of Perception of OCL Questionnaire Using Rasch Model. International Journal on Advanced Science Engineering Information and Technology. Vol.6 (6).

Reisberg, D., (2006). Cognition: Exploring the Science of the Mind. W.W. Norton and Company, New York.

Rubin, R. B., & Martin, M. M. (1994). Development of a measure of IC competence. Communication Research Reports, 11(1), 33-44.

Sadtyadi, H., & Paramita, S. (2022). Analysis of Academic IC Factors in the Covid-19 Pandemic Period of Buddhist College Students. Journal of Educational and Social Research, 12(1), 144. https://doi.org/10.36941/jesr-2022-0013

Schmitt, B.H. (1999) Experiential Marketing. Journal of Marketing Management, 15, 53-67. http://dx.doi.org/10.1362/026725799784870496

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. john wiley & sons.

Shan, M., Wen-bo, Y., & Shan, M. (2018). College Students' IC from the Perspective of Social Exchange Theory. 1st International Conference on Contemporary Education and Economic Development (CEED 2018) College, 221(Ceed), 523–527. https://doi.org/10.2991/ceed-18.2018.101

Sugino, C. (2021). Student perceptions of a synchronous online cooperative learning course in a Japanese women's university during the COVID-19 pandemic. Education Sciences, 11(5), 1–19. https://doi.org/10.3390/educsci11050231

Sukarna, T., F. (2021). The Effect of Student's IC Skills on Student's Learning Outcomes In Mechanical Engineering Subject. Journal of Architectural Research and Education. Vol 3 (No.2). doi:10.17509/jare.v3i2.37402

Sun, Y., & Gao, F. (2020). An investigation of the effect of intrinsic motivation on students ' intention to use mobile devices in language learning. Educational Technology Research and Development, 68(3), 1181–1198. https://doi.org/10.1007/s11423-019-09733-9

Suranto, A. W. (2011). Komunikasi Interpersonal. Yogyakarta: Ar-Ruzz Media.

Teo, T., Zhou, M., Fan, A. C. W., & Huang, F. (2019). Factors that affect university students' intention to use Moodle: a study in Macau. Educational Technology Research and Development, 67(3), 749–766. https://doi.org/10.1007/s11423-019-09650-x

Tuerah, P., Pangalila, T., Najoan, M., & Korompis, E. (2019). Effects of IC; Work Ethic and Leadership Style towards Junior High School Teacher Performance in the City of Tomohon. Proceedings of the International Conference on Social Science 2019 (ICSS 2019), 383(Icss), 676–681. https://doi.org/10.2991/icss19.2019.94

Utami, S., Maftukhah, I., Tusyanah, T., Sakitri, W., & Wahyuningrum, I. F. S. (2022). Promoting Collaborative Learning in Higher Education in A Large Class Size. *LEAD (Language, Education and Development)*, *2*(1), 45-57.https://doi.org/10.20884/1.lead.2022.2.1.5500

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 425-478.

Verbitskaya, L. A., Malykh, S. B., Zinchenko, Y. P., & Tikhomirova, T. N. (2015). Cognitive predictors of success in learning Russian. Psychology in Russia: State of the Art, 8(4), 91-100.

Vygotsky, L. (1978). Mind in society. Cambridge, MA: Harvard University Press.

Wahyudin, A. (2015). Metodologi Penelitian (Penelitian Bisnis & Pendidikan).

Wongwatkit, C., Panjaburee, P., Srisawasdi, N., & Seprum, P. (2020). Moderating effects of gender differences on the relationships between perceived learning support, intention to use, and learning performance in a personalized E-lEarning. Journal of Computers in Education, 7(2), 229-255. https://doi.org/10.1007/s40692-020-00154-9

Yanto, H., Fam, S. F., Baroroh, N., & Jati, K. W. (2018). Graduates'accounting Competencies in Global Business: Perceptions of Indonesian Practitioners and Academics. *Academy of Accounting and Financial Studies Journal*, *22*(3), 1-17.

Yanto, H; Yuliana, E; Wee, M. Sodikun, Sykur, S. (2020). Strategies for Building Communication and Negotiation Competencies for Prospective Accountants. *Humanities & Social Sciences Reviews*, Vol. 8(1), 864-872, Available at SSRN: https://ssrn.com/abstract=3556357

Yun, H., Kim, S., and Chung, E., K. (2021). Exploring the Structural Relationships between Medical Students' Motivational Regulation, Cognitive Learning, and Academic Performance in Online Learning. Korean Journal of Medical Education. 33 (2): 115-124. doi: 10.3946/kjme.2021.193

Zgheib, A., M., Ali, A., and Sabra, R. (2021). Experience with Forced Transition to Online Learning During The COVID-19 Pandemic: Students' CP and Their Perceptions of Teaching. The Asia Pacific Scholar, Vol. 6 No. 3. https://doi.org/10.29060/TAPS.2021-6-3/OA2377

4. Pemberitahuan Memperbaiki Layout dan Daftar Pustaka

Participants

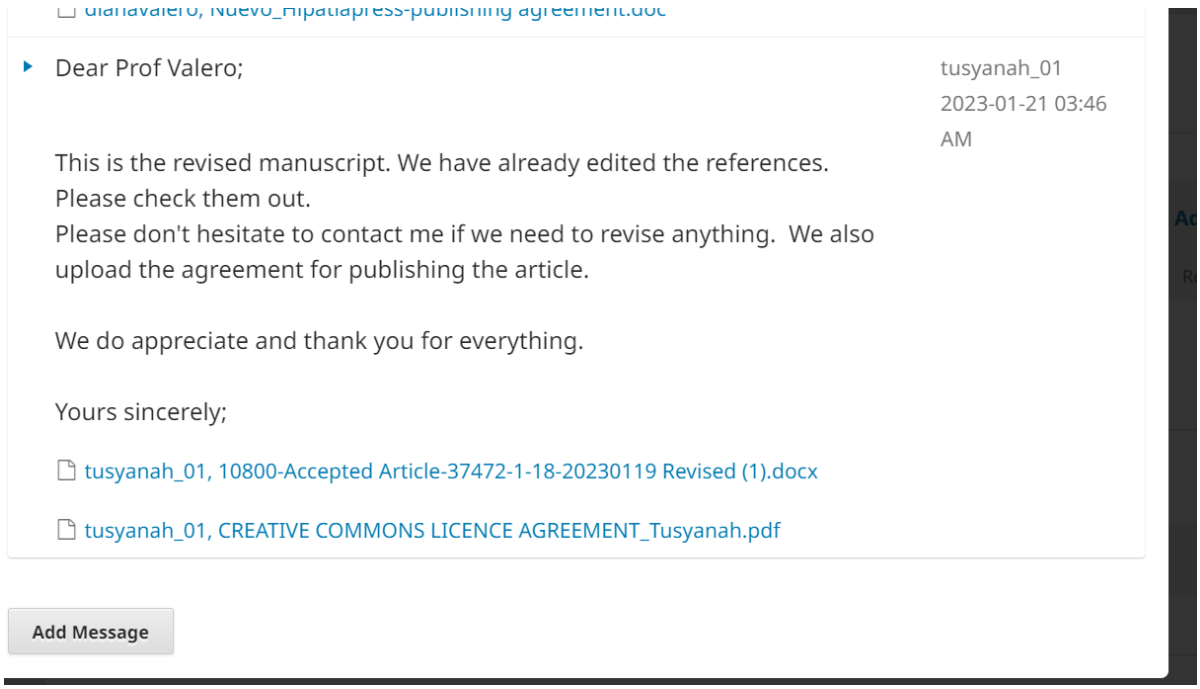
Diana Valero (dianavalero)

Tusyanah Tusyanah (tusyanah_01)

Messages

Note	From
Dear Authors Find attached the layout article, we have found problems in the list of references since they do not follow the APA 7 format, and there are discrepancies (for example, on some occasions it puts Vol. X, N° 3, and on others X(3)). Please check the article, especially the references, and remember that, according to the journal's instructions: "Always indicate the DOI of the article (if not, indicate the website where the abstract or the full article can be found)". We hope to include the article in the February issue, so we would need these changes as soon as possible.	dianavalero 2023-01-19 11:31 AM

5. Submit Perbaikan referensi dan layout



and International Journal of Sociology of Education

Hipatia Press
www.hipatiapress.com

Instructions for authors, subscriptions and further details:

http://rise.hipatiapress.com

The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance

Tusyanah Tusyanah[1]
Wijang Sakitri[1]
Ismiyati Ismiyati[1]
Fransisca Rahmawati Indira[1]
Edy Suryanto[1]
1) Universitas Negeri Semarang, Indonesia

To cite this article: Domínguez-Vergara, J.; Santa-Cruz-Espinoza, H.; Chávez-Ventura, G.; & Ybañez-Carranza, J. (2023). The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance*. International Journal of Sociology of Education, 12*(1), 27-53. http://dx.doi.org/10.17583/rise.9236

To link this article: http://dx.doi.org/10.17583/rise.2021.5954

PLEASE SCROLL DOWN FOR ARTICLE

The terms and conditions of use are related to the Open Journal System and to Creative Commons Attribution License (CC-BY)

RISE – International Journal of Sociology of Education Vol.12 No.1 February 2023 27-53

The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance

Tusyanah Tusyanah
Wijang Sakitri
Universitas Negeri Semarang *Universitas Negeri Semarang*

Ismiyati Ismiyati
Fransisca Rahmawati Indira
Universitas Negeri Semarang *Universitas Negeri Semarang*

Edy Suryanto
Universitas Negeri Semarang

(*Received: 30 July 2022; Accepted: 2023;Published: 2023)*

Abstract

2023 Hipatia Press
ISSN: 2014-3575
http://doi.org/10.17583/rise.2021.5954

Hipatia Press
www.hipatiapress.com

Collaborative learning encourages students to collaborate among students; it is one of the four 21st-century skills suggested by UNESCO. Cognitive Performance (CP) and Interpersonal Communication (IC) are the themes in the research carried out in the Business English class at the Faculty of Economics, Universitas Negeri Semarang (UNNES), which implements Online Collaborative Learning (OCL). This research is a quantitative study with a population of FE UNNES students participating in Business English. The 680 population and 252 students were sampled and calculated using the Slovin formula with a margin of error of 5%. Data will be collected using questionnaires and analyzed with SEM-PLS. The study analyzed ten hypotheses, and the results were accepted. The results showed that all these hypotheses were accepted. Behavior in OCL as an independent variable had a direct positive and significant effect on IC by 65.8%, and the effect of behavior in OCL on CP was 74.7%. It means that OCL can be alternative learning to increase CP and IC. Educators can employ OCL in the classroom to improve students' CP and IC.

Keywords: Online Collaborative Learning (OCL), Cognitive Performance (CP), Interpersonal Communication (IC)

RISE – International Journal of Sociology of Education Vol.12 No.1 February 2023 27-53

El papel del aprendizaje colaborativo en línea (OCL) en la comunicación interpersonal y el rendimiento cognitivo

Tusyanah Tusyanah
Wijang Sakitri
Universitas Negeri Semarang *Universitas Negeri Semarang*

Ismiyati Ismiyati
Fransisca Rahmawati Indira
Universitas Negeri Semarang *Universitas Negeri Semarang*

Edy Suryanto
Universitas Negeri Semarang

(*Recibido: 30 Julio 2022; Aceptado: 2023; Publicado: 2023)*

Resumen

El aprendizaje colaborativo alienta a los estudiantes a colaborar entre ellos; siendo una de las cuatro habilidades del siglo XXI sugeridas por la UNESCO. El Rendimiento Cognitivo (CP) y la Comunicación Interpersonal (IC) son los temas en los que se ha centrado esta investigación realizada en la clase de Inglés para los Negocios de la Facultad de Economía, Universitas Negeri Semarang (UNNES), que implementa el Aprendizaje Colaborativo en Línea (OCL). Esta investigación es un estudio cuantitativo con una población de estudiantes de FE UNNES que participan en Inglés para los Negocios. Con una población de 680 estudiantes, nuestra muestra fue de 252, muestra calculada mediante la fórmula de Slovin con un margen de error

2023 Hipatia Press
ISSN: 2014-3575
http://doi.org/10.17583/rise.2021.5954

Hipatia Press
www.hipatiapress.com

del 5%. Los datos se recopilaron mediante cuestionarios y se analizaron con SEM-PLS. El estudio analizó diez hipótesis y siendo los resultados positivos. Los resultados demostraron que todas las hipótesis fueron válidas. El comportamiento en OCL como variable independiente tuvo un efecto directo positivo y significativo en el IC en un 65,8%, y el efecto del comportamiento en OCL en CP fue de 74,7%. Significa que OCL puede ser un aprendizaje alternativo para aumentar CP e IC. Los educadores pueden emplear OCL en el aula para mejorar el CP y el IC de los estudiantes.

Palabras clave: aprendizaje colaborativo en línea (OCL), rendimiento cognitivo (CP), comunicación interpersonal (IC)

Pandemic conditions make all activities carried out online, which leads the Ministry of Education and Culture; the Indonesian government encourages Educational Institutions to conduct teaching through various digital platforms. It is also a consideration for UNNES, one of the higher education institutions in Indonesia, to innovate to adapt to various changes in this era. UNNES, in the academic field, has made a breakthrough in implementing learning. It is stated in the regulation of the Rector of UNNES No B/4223/UN37/TU/2021. The regulation covers the changes in the implementation of learning and encourages lecturers to carry out project-based and case-based learning in the form of collaborative learning

Collaborative learning encourages students to collaborate among students, as suggested by UNESCO. The collaborative learning model is expected to foster collaboration attitudes and habits from an early age. As Purwanto (2015) wrote that in the information age, a new work culture developed that was different from the industrial era; one of them is the ability to cooperate or collaborate. Collaborative learning will provide an essential experience for students. Yanto et al. (2018) stated that students need to improve communication and training skills as essential competencies that will be useful for graduates at work, especially when facing differences of opinion and perceptions with colleagues. The findings of Yanto et al. (2020) have also confirmed that students' communication skills shown from involvement have a positive and significant effect on negotiation skills, so collaborative processes in online learning may train communication and negotiation skills both with lecturers and other students in class.

In the learning process, students must achieve learning objectives covering three domains, i.e., cognitive, affective, and psychomotor. Those three domains must be developed during the learning process so that learning outcomes are more thorough and complete. The research was carried out in the Business English class at the Faculty of Economics, UNNES since this class implements Online Collaborative Learning (OCL), where students are given online teaching with various learning models that require students to collaborate.

The first theme in the study is Cognitive Performance (CP). CP is usually the central assessment of a teacher for his students through the final exam by working on the questions by the essential competencies that have been taught (Zgheib et al., 2021). Another statement regarding CP is expressed by Yun et al. (2021). They state that cognitive learning effectively processes basic or complex information from texts and instructions, including exercise, elaboration, organization, and critical thinking.

Online learning, common nowadays, is an excellent alternative to learning. Zgheib et al. (2021) found that the rapid change from offline to online learning did not negatively affect student knowledge acquisition (Cognitive Performance). Then, research by Keskin (2019) regarding factors that affect student learning through online or blended learning in terms of motivation and cognitive suggests that students with high assignment scores, e-learning motivation, and self-efficacy prefer to learn in a blended learning environment.

Furthermore, Yun et al. (2021) also studied the structural relationship between motivational regulation, cognitive learning, and academic performance in online learning in medical students in Korea. They found that motivational regulation strategies are very influential in predicting students' cognitive learning, which improves their learning performance. Then, research by Ching et al. (2015) showed that mindfulness meditation courses for one semester could increase learning effectiveness and aspects of cognitive performance memory among Taiwanese students.

It means that online learning can affect students' cognitive performance. There can be several alternative learning methods, such as collaborative, independent, project-based, and case-based.

Then the second theme is Interpersonal Communication (IC). This second theme needs to be developed because being a student means having the ability to recognize problems, find their impact and root causes, and identify solutions to overcome the problems faced. Identification of problems until problem resolution can be made together with good communication. IC can be interpreted as communication that, if directly carried out, gives rise to personal contact between communicators and communicants. The purpose of IC is to affect others to change attitudes and views towards something (Alang, 2018). IC is inseparable from psychological relationships in which processes and mutual interactions occur. The most obvious examples are kinship relationships, relationships between teachers and pupils, co-workers, and relationships between someone who leads and is led (Shan et al., 2018).

The development of creativity and improving academic achievement in schools will experience obstacles if IC is hampered. It shows that teachers' efforts must develop students' understanding of the

importance of IC and the factors that affect the low level of interpersonal communication skills (Barseli et al., 2019). Then, interpersonal communication in teaching and learning activities is the presence of exchange behavior, expressed in emotional and material exchanges between teachers, students, and classmates (Shan et al., 2018).

Research on IC by Tuerah et al. (2019) found that IC positively affects teacher performance, meaning that good IC will improve teacher performance. Then, it is supported by research by Sadtyadi and Paramita (2022), which stated that the most influential factors in IC are motivation to communicate in the academic field, with a score of 0.81, and self-confidence, with a score of 0.67.

Then, Sukarna (2021) also suggests a positive and significant effect of IC skills on student learning outcomes. Therefore, students need to have good IC skills in OCL so that the development of creativity and improvement of academic achievement in schools do not experience obstacles.

Theory of Planned Behaviour (TPB)

Many studies have been carried out in various studies related to CP and IC. Various theories have been implemented to measure the theme. One of the most frequently used theories is the TPB. The TPB further develops the Theory of Reasoned Action (TRA). Icek Ajzen initiated TPB in 1985 through his work entitled "From Intention to Action: A Theory of Planned Behavior"(Ajzen, 2005).

This theory states that a person's behavior results from a rational process directed towards a specific goal and a sequence of thinking. The action or behavior is based on each behavior's consideration, consequences, and outcome. They are evaluated, and ultimately a decision is made on whether to act. Ajzen (2005) includes three background factors: personal, social, and information. Personal factors are a person's general attitude towards something, e.g., personality traits, values, emotions, and intelligence. Social factors include age, gender, race, ethnicity, education, income, and religion. The information factor is experience, knowledge, and media exposure.

Online Collaborative Learning (OCL)

Online learning lies at the crossroads of distance education, human-computer interaction, instructional technology, and cognitive science (Larreamendy-Joerns & Leinhardt, 2006). Collaborative learning is a learning environment in which individual learners support and add to the pool of knowledge that arises from a group, emphasizing peer relationships as learners work together to create learning communities (Moore & Kearsley, 2012). The term "collaborative learning" corresponds to Vygotsky's theory of learning (1978), specifically, the Zone of Proximal Development (ZPD), in which it is a common understanding can be developed during this learning process.

OCL is a situation where two or more people are learning or trying to learn something together online (Zoom, WhatsApp Group, Google Meet, and other applications that allow collaboration). Unlike learning alone, people involved in collaborative learning utilize each other's resources and skills. Hrastinski (2009) suggests that online learning is best achieved through collaboration and participation. Then this is also supported by three separate studies from 26 online courses at the New Jersey Institute of Technology that stipulate that participation in collaborative learning correlates with higher learning outcomes compared to those in traditional settings (Hiltz et al., 2000). OCL is related to behavioral belief, which is related to beliefs about the possibility of behavior occurring. When someone has confidence that he can take part in learning with the OCL system, it will cause an intention to take the OCL class well. Utami et al. (2022) found that collaborative learning allows students to provide feedback with various available media and be taught decision-making skills.

Interpersonal Communication (IC)

Proficiency in Interpersonal Communication (IC) is valuable in social life. Suranto (2011) stated that IC sends and receives messages between two people or a small group of people with feedback. IC also requires reciprocal actions between the actors involved in the communication. In other words, communicators exchange information, thoughts, and ideas. IC is a particular form of human communication that occurs when we interact simultaneously with others and affect each other (Qodriah & Rakhma, 2021).

Shan et al. (2018) stated that IC in learning activities could be formed by exchange behaviors expressed in emotional and material exchanges between lecturers, students, and classmates. IC in the SDGs is included in the control belief, which is the belief that a behavior can be carried out over is entirely affected by the individual's control to act and the influencing factors. In the study, students' IC in learning activities through the OCL method can be fully controlled by the students acting, behaving, and communicating with lecturers and classmates.

Cognitive Performance (CP)

Cognitive comes from the word cognition, which means to know, a broad sense that means the acquisition, organization, and use of knowledge (Mayangsari & Astuti, 2018). Cognitive is the ability to imagine and describe objects or events in memory and act according to those depictions (Desmita, 2010). Another opinion was put forward by Mayangsari & Astuti (2018), who posited that CP is a term used to describe all mental activities related to perception, mind, and memory and the processing of information that allows a person to acquire knowledge.

The level and quality of an individual's CP result from the interaction between three types of cognitive factors: (a) the storage of knowledge gained, (b) the ability to think, and (c) cognitive efficiency. Non-cognitive factors, described as facilitators-inhibitors, represent personality attributes such as motivation and extrinsic factors such as family support. Students' beliefs and beliefs strongly affect individual CP regarding their cognitive ability to complete tasks and projects with friends in OCL. In the study, the student's CP will increase when a person has good self-confidence and believes he can participate in OCL.

Methodology

Research Design

It is a quantitative study with a hypothesis-testing design that aims to analyze, describe, and obtain empirical evidence of the effect pattern between variables (Wahyudin, 2015). The study uses Structural Equation Modeling (SEM), a multivariate statistical analysis technique.

Research Sample

The study examines Economics students in Business English Class at the Faculty of Economics in UNNES, Indonesia. The number of students is 680. Samples were 252 students taken using the *Slovin* formula with a margin of error of 5%.

Research Instrument

Data are collected by distributing the questionnaires via Google form to Business English students utilizing OCL at *Universitas Negeri Semarang*. Data on online pedagogical practices and online teaching behavior can be revealed using instruments based on a *Likert* scale. The definition and indicators of the research instrument can be seen in Table 1.

Table 1.
Research Measurement

No.	Variable	The Operational Definition	Indicators/Measurement
1.	Interpersonal Communication (IC)	IC refers to the exchange of messages, verbal and nonverbal, between people, regardless of the relationship they share. Thus, IC includes exchanging messages in all sorts of relationships, from functional to casual to intimate (Guerrero, Andersen, & Afifi, 2007).	Self-Disclosure, Empathy, Social Relaxation, Assertiveness, Interaction Management, Altercentrism, Expressiveness, Supportiveness, Immediacy, and Environmental Control. (Rubin & Martin,1994)

2.	Cognitive Performance (CP)	CP is defined based on the cognitive domain recognized in cognitive psychology and current neuropsychological texts (Balota & Marsh, 2004; Lamberts & Goldstone, 2005; Lezak et al., 2004; Reisberg, 2006). These domains include information processing, accelerated performance, attention, knowledge and expertise, executive functions, and memory (Chang, 2012).	Verbitskaya et al. (2015) measured students' CP through the results of the Unified State Exam. Then, we use learning outcomes like Daily tasks, mid-test, and final exams to measure CP. (Authors, 2022)
3.	Perception of OCL	OCL means participants learn together in teams using information communication technology, particularly the Internet, as a mediating tool. Ng EMW (2012). In the study, the perception in question is from students' point of view in participating in OCL learning.	Learning Environment, Learning Design, Soft Skills, and Learning Interaction. (Kiarie & Muindi, 2020 & Razali et.al, 2016)
4.	Behavior in OCL	Behavior is defined as verbal speech (excluding verbal reports in the context of psychological judgment) or movements potentially available to careful observers using normal sensory processes. (Furr, 2009). In the study, the behavior is how students act while participating in OCL learning.	Sense, Feel, Think, ACT, and Relate (Schmitt, 1999)
5.	Intention in OCL	Behavioral intention is a proposition that relates oneself to an impending action. (Venkatesh, 2003) In the study, the desire in students to take various actions in OCL learning.	Intentions, Usage Predictions, and Plans (Venkatesh, 2003)

Results

Partial Least Square (PLS) Model Scheme

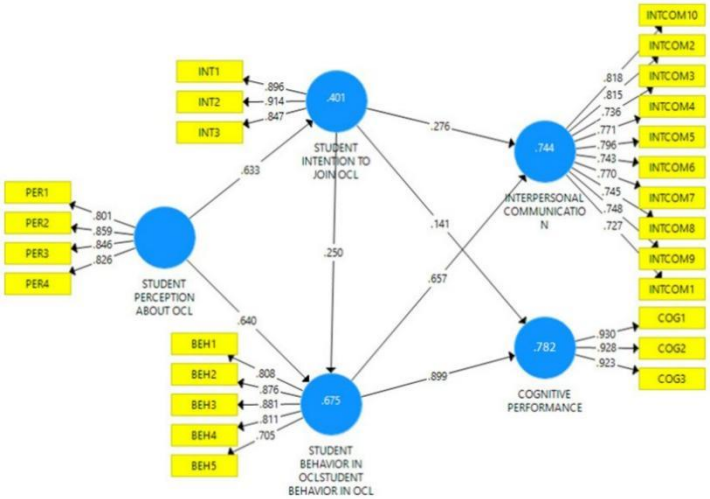


Figure 1. Outer Model Test Results

The outer model test results show the validity and reliability of the statements listed in the questionnaire. Convergent validity can be seen from the Average Variance Extracted (AVE) on research variables, as it is shown in Table 2.

Table 2.
Average Variance Extracted (AVE)

Variable	AVE Value	Result
IC (Y1)	0.589	Valid
CP (Y2)	0.818	Valid
Behavior in OCL (M1)	0.670	Valid
The intention in OCL (M2)	0.786	Valid
Perception of OCL (X)	0.694	Valid

Source: processed data, 2022

Table 2. shows that the AVE value of each research variable > 0.5 so that the research variable meets the role of thumb and is declared a good research construct. Outer models in Smart PLS version 3.0 also require reliability tests that can be seen through *Cronbach's alpha* and composite reliability. *Cronbach's alpha* is used to measure the lower limit of the reliability value of a construct. In comparison, composite reliability is used to measure the actual value of the reliability of a construct. The Rule of thumb of *Cronbach's alpha* and composite reliability > 0.7 (Abdillah & Hartono, 2015).

Table 3.
Cronbach's alpha dan Composite Reliability

Variable	Cronbach's Alpha	Composite Reliability	Result
Interpersonal Communication (Y1)	0.922	0.964	Reliable
Cognitive Performance(Y2)	0.955	0.935	Reliable
Behavior in OCL (M1)	0.875	0.910	Reliable
The intention in OCL (M2)	0.864	0.917	Reliable
Perception of OCL (X)	0.853	0.901	Reliable

Source: processed data, 2022

Table 3. shows the Rule of thumb of *Cronbach's alpha* and composite reliability > 0.7 (Abdillah & Hartono, 2015, p. 196). *Cronbach's alpha* and composite reliability have qualified. The overall research variables have a high level of reliability.

After analyzing the outer model, the next step is analyzing the inner model. The results of the inner model can be seen in Figure 2.

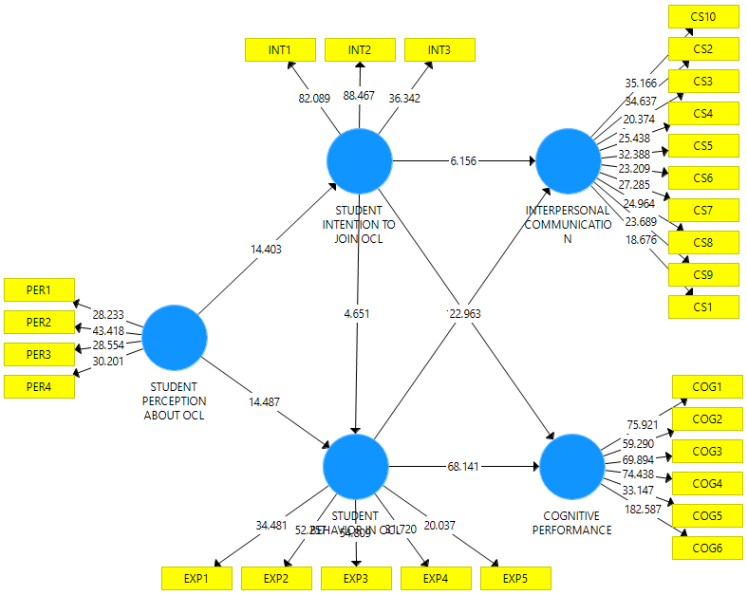


Figure 2. Inner Model Test Results

Table 4.
R-Square Test Results (R2)

Variables	R-Square	Adjusted R-Square
IC (Y1)	0.744	0.742
CP (Y2)	0.782	0.78

Source: processed data, 2022

Table 4. shows that the magnitude of the R2 variables IC and Behavior in OCL is vital because the > 0.67. At the same time, CP in the category is powerful because the > 0.67 and close to 1. In contrast, Intention in OCL is in a low category. Furthermore, the significance of the path coefficient is seen from the t-statistic value of > 1.96 for the two-tailed hypothesis in the study and the t-statistic > t-table or p-value < 0.05 (Ghozali, 2014).

Structural models are tested to test the relationship between latent constructs. There are several tests for structural models; one is R-Square on endogenous constructs (Sekaran & Bougie, 2016). According to Chin (1998), the R-square values are 0.67 (strong), 0.33 (moderate), and 0.19 (weak).

The first structural model is that perception of OLC on IC through behavior in OCL has Adjusted-R-Square 0.742 or 74.2%. It shows that this research model has a strong coefficient of determination. The value of R-Square is the coefficient of determination on the endogenous construct.

Then, the second structural model is that perception of OLC on CP through behavior in OCL has Adjusted-R-Square 0.99 or 99%. It shows that this research model has a strong coefficient of determination.

Table 5 and Table 6 show the direct and indirect effects of the variables analyzed by SEM-PLS.

Table 5.
Path Coefficient

	Variables	Original Sample (O)	T-Statistic	P-values	Result
H1	Perception of OCL -> Intention in OCL	0.632	14.403	0.000	Accepted
H2	Perception of OCL -> Behavior in OCL	0.639	14.487	0.000	Accepted
H3	The intention in OCL -> Behavior in OCL	0.252	4.651	0.000	Accepted
H4	The intention in OCL -> IC	0.274	6.156	0.000	Accepted
H5	The intention in OCL -> CP	0.330	22.963	0.000	Accepted
H6	Behavior in OCL -> IC	0.658	17.421	0.000	Accepted
H7	Behavior in OCL -> CP	0.747	68.141	0.000	Accepted

Source: processed data, 2022

Table 6.
Specific Indirect Effect

	Variable	Original Sample (O)	T-Statistic	P-Values	Results
H8	Perception of OCL -> Intention in OCL -> Behavior in OCL	0.159	4.419	0.000	Accepted
H9	The intention in OCL -> Behavior in OCL -> CP	0.188	4.741	0.000	Accepted

H10	The intention in OCL -> Behavior in OCL -> IC	0.165	4.513	0.000	Accepted

Source: processed data, 2022

Discussion

Business English employs OCL as the method of study. The subject emphasizes the skills of writing and speaking English in a business context. In order for students to achieve those competencies, they must practice being able to speak and write in English. Therefore, the lecturer asked them to make videos, write articles, do other assignments related to these language skills, and upload them on the web blog. This web blog is collective, meaning that one group can submit these tasks in one blog managed by group members.

Furthermore, collaborative learning should be practiced because it is one of the dimensions of Indonesian students. Indonesian students should collaborate with various people from various backgrounds. When they collaborate, they can open up to improve themselves.

The results showed that the ten hypotheses were accepted based on the results of the SEM-PLS analysis test. Structural models for both themes, IC and CP, can be strongly affected by endogenous variables. The coefficient of determination for IC is 0.74, while the coefficient for CP is 0.99.

Intention becomes an essential component as a driver for the creation of behavior. The study found that intention has a significant effect on IC. It means more students are interested in participating in OCL in the Business English course and will improve IC skills. The learning process in the Business English course emphasizes project-based learning. The project emphasizes students honing their ability to communicate in English properly and correctly. By providing various projects, students are expected to be able to communicate well and correctly. Students who intend to participate in OCL will be consciously and meaningfully encouraged to have IC skills.

Behavior that is carried out consciously will result in achievement. As found in the study, Behavior in OCL significantly affects CP and IC. It means the more students consciously have good behavior in OCL, the better their CP and IC skills will be.

However, the study also showed that indirect effects were smaller than direct effects but remained significant. It can be seen in table 7. The effect of mediating variable; behavior in OCL on CP and IC decreases the effect.

Table 7

Summary of Direct and Indirect Effects of Behavior in OCL

Variables	Direct Effects	Indirect Effects
The intention in OCL -> IC	27.4%	
The intention in OCL -> CP	33%	
The intention in OCL -> Behavior in OCL -> CP		18.8%
The intention in OCL -> Behavior in OCL -> IC		16.5%

Source: processed data, 2022

Both CP and IC get a more negligible effect by the Behavior in OCL if it is indirect. As we know, communication in learning activities can be formed by exchange behaviors expressed in emotional and material exchanges between lecturers, students, and classmates (Shan et al., 2018). The direct effect of intention in OCL is more dominant than the indirect effect on IC through Behavior in OCL as it happens in CP.

Perception of OCL Has a Positive and Significant Effect on Intention in OCL

There is a positive and significant effect of perception of OCL on intention in OCL for 63.2%. It means that the H1 hypothesis is accepted. The study's results are consistent with previous research by Sugino (2021) and Muthuprasad et al. (2021), which stated that student perceptions affect the intention to participate in online learning. Students perceive OCL as a fun and flexible learning

alternative that can be accessed online, so they intend to join OCL. The OCL conducted in the Business English class is that students are demanded to collaborate on making presentations, creating texts, and creating web blogs for one semester. It challenges students to collaborate creatively to achieve CP and IC.

Perception of OCL Has a Positive and Significant Effect on Behavior in OCL

There is a positive and significant effect of perception of OCL on intention in OCL for 63.9%. It means that the H2 hypothesis is accepted. The study's results are consistent with previous research by Nur Agung & OP (2020) and Chang et al. (2017), which stated that student perceptions affect student behavior in the online learning process. Based on the study results, among students who participated in OCL, 63.9% were affected by their perception of OCL. Students perceive OCL as a fun and flexible learning alternative that can be accessed online, so they join OCL.

The Intention in OCL Has a Positive and Significant Effect on Behavior in OCL

Students' intention in the OCL affects 25.2% of their behavior to join the OCL. It means that the H3 hypothesis is accepted. The results of the study are consistent with previous studies, as found by Teo et al. (2019) and Sun & Gao (2020), which stated that intention affects behavior in learning activities.

The Intention in OCL Has a Positive and Significant Effect on Students' IC

There is a positive and significant effect of intention in OCL on Students' IC for 27.4%. The study's results are consistent with previous research, which found that students' intentions in online learning affect communication skills. Alalwan et al. (2019) found that intention affects students' communication skills in an online learning environment.

The Intention in OCL Has a Positive and Significant Effect on Students' CP

There is a positive and significant effect of intention in OCL students' CP for 33%. Wongwatkit et al. (2020) found that intention affects learner performance, whereas CP is part of learner performance. Then, Alalwan et al. (2019) also stated that intention affects student academic performance. The study's results also strengthen previous research emphasizing CP variables. Furthermore, from a human perspective, *CP* can be defined as the efficiency of task performance in a particular environment (Pattyn et al., 2008).

Behavior in OCL Has a Positive and Significant Effect on Students' IC

There is a positive and significant effect of student behavior on students' IC for 65.8%. This finding is also supported by a previous study by Putra & Patmaningrum (2018) that the behavior of students learning using YouTube can improve their ability to IC. Students' behavior and practice can affect their IC skills.

Behavior in OCL Has a Positive and Significant Effect on Students' CP

There is a positive and significant effect of student behavior on students' CP for 74.7%. Hossain et al. (2019) found that behavioral factors have a positive and significant effect on academic performance in which there is a CP component. In contrast, this research emphasizes CP due to the OCL learning process.

Students' experiences in their learning improve their CP skills. Learning Business English courses that emphasize more on the project-based learning process will make it easier for students to create understanding in themselves through various planned actions in the learning process that has been carried out.

Perception of OCL Has a Positive and Significant Effect on Behavior in OCL through Intention in OCL

There is a positive and significant effect of perception of OCL on Behavior in OCL through Intention in OCL for 15.9%. The study's results are consistent with previous research by Sugino (2021) and Muthuprasad et al. (2021), which stated that student perceptions affect the intention to participate in online learning. Teo et al. (2019) also suggest that intention affects behavior in learning activities.

The Intention in OCL Has a Positive and Significant Effect on Students' CP through Behavior in OCL

There is a positive and significant effect of intention in OCL on CP through behavior in OCL for 18.8% positive. The results of the study are consistent with previous research, as found by Teo et al. (2019), suggesting that intention affects behavior in learning activities. Then, Martaida et al. (2017), in their research on critical thinking and cognitive ability in learning, stated that cognitive ability could improve student behavior in the learning process.

The Intention in OCL Has a Positive and Significant Effect on Students' IC through Behavior in OCL

There is a positive and significant effect of intention in OCL on IC through behavior in OCL for 16.5%. The study results are consistent with previous research by Marcos & Coelho (2018), which states that communication has a significant and positive effect on student behavior intentions. Then supported by the research of Sadtyadi and Paramita (2022), the study's results stated that the most influential factor in IC is the motivation to communicate in the academic field, with a score of 0.81. The motivation for communicating is encouraged because of the intention of the individual to participate in the OCL learning.

Conclusion and Recommendation

From the discussion, endogenous variables can strongly affect the structural models for both IC and CP. The coefficient for IC is 0.744, and the coefficient for CP is 0.782. An interesting thing is about the mediating variable: Behavior in OCL. The direct effect is more than the indirect effect of the intention of OCL on both CP and IC. If the direct effect, the behavior in OCL has a positive and significant on IC by 65.8%, and the effect of behavior in OCL on CP is 74.7%. It is undoubtedly an alternative to learning that educators in the classroom may implement.

Based on the conclusions above, it can be suggested that educators be able to implement OCL as an alternative learning because when students experience OCL, it encourages and increases students' IC and CP. Furthermore, the next researcher adds other variables expected to increase the effect on both themes: peer variables, learning environment, or internal variables such as emotional intelligence and intelligence.

References

Abdillah, W., & Hartono, J. (2015). *Partial Least Square (PLS): Alternatif Structural Equation Modeling (SEM) dalam Penelitian Bisnis*. Yogyakarta: Penerbit Andi.

Ajzen, I. (2005). *Attitudes, Personality, and Behavior* (2nd ed.). New York: Open University Pres-Mc Graw- Hill Education.

Alalwan, N., Al-Rahmi, W. M., Alfarraj, O., Alzahrani, A., Yahaya, N., & Al-Rahmi, A. M. (2019). Integrated three theories to develop a model of factors affecting students' academic performance in higher education. *IEEE* Access, 7, 98725-98742. https://doi.org/10.1109/access.2019.2928142

Alang, S. (2018). Komunikasi Interpersonal Guru Dalam Meningkatkan Keaktifan Belajar Siswa Kelas X Jurusan Teknik Sepeda Motor di Smk Negeri 1 Parigi. *Kinesik*, 1(1): 1-11. http://garuda.ristekbrin.go.id/documents/ detail/1321791

Balota, D.A., Marsh, E.J. (Eds.), (2004). *Cognitive Psychology: Key Readings*. Psychology Press, New York.

Barseli, M., Sembiring, K., Ifdil, I., & Fitria, L. (2019). The concept of student IC. *JPPI (Jurnal Penelitian Pendidikan Indonesia*), 4(2), 129–134. https://doi.org/10.29210/02018259

Chang, C.-T., Hajiyev, J., & Su, C.-R. (2017). Examining the students' behavioral intention to use e-learning in Azerbaijan? The General Extended Technology Acceptance Model for E-learning approach. *Computers & Education*, 111, 128 143. doi:10.1016/j.compedu.2017.04.01010.1016/j.compedu.2017.04.010

Chang, Y. K., Labban, J. D., Gapin, J. I., & Etnier, J. L. (2012). The effects of acute exercise on CP: a meta-analysis. Brain Research, 1453, 87-101. https://doi.org/10.1016/j.brainres.2012.02.068

Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modeling. *MIS quarterly*, vii-xvi. https://www.jstor.org/stable/249674

Ching, H., Koo, M., Tsai, T-H., & Chen, C-Y. (2015). Effects of a Mindfulness Meditation Course on Learning and CP among University Students in Taiwan. *Hindawi Publishing Corporation Evidence-Based Complementary and Alternative Medicine*. Volume 2015, Article ID 254358 http://dx.doi.org/10.1155/2015/254358

Desmita. (2010). *Psikologi perkembangan*. Bandung: PT. Remaja Rosdakarya.

Furr, R. M. (2009). The study of behaviour in personality psychology: Meaning, importance and measurement. *European Journal of Personality*, 23(5), 437–453. https://doi.org/10.1002/per.726

Ghozali, I. (2014). Structural Equation Modeling, Metode Alternatif dengan Partial Least Square (PLS), Edisi 4, Semarang: Badan Penerbit Universitas Diponegoro.

Guerrero, L. A., Andersen, P. A., & Afifi, W. A. (2007). *Close encounters: Communication in relationships* (2nd ed.). Thousand Oaks, CA: Sage

Hiltz, S. R., Coppola, N., Rotter, N., Turoff, M., & Benbunan-Fich, R. (2000). Measuring the importance of collaborative learning for the effectiveness of ALN: A multi-measure, multi-method approach. *Journal of Asynchronous Learning Networks*, 4(2), 103–125. http://dx.doi.org/10.24059/olj.v4i2.1904

Hossain, S. F., Xi, Z., Nurunnabi, M., & Anwar, B. (2019). Sustainable academic performance in higher education: A mixed-method approach. *Interactive Learning Environments*, 30(4), 707–720. https://doi.org/10.1080/10494820.2019.1680392

Hrastinski, S. (2009). A theory of online learning as online participation. *Computers & Education*, 52, 78–82. https://doi.org/10.1016/j.compedu.2008.06.009

Keskin, S. (2019). Factors Affecting Students' Preferences for Online and Blended Learning: Motivational vs. Cognitive. European Distance and E-Learning Network. Retrieved from https://www.ceeol.com/search/article-detail?id=848342

Kiarie, C., & Muindi, B. (2020). Students' experiences and perceptions of OCL in two Kenyan universities. SOTL in the South. 4(2), 138-159. https://doi.org/10.36615/sotls.v4i2.130

Lamberts, K., Goldstone, R.L. (Eds.), (2005). *The Handbook of Cognition*. Sage, London.

Larreamendy-Joerns, J. & Leinhardt, G. (2006). Going the distance with online education. *Review of Educational Research*, 76(4), 567-605. https://www.jstor.org/stable/4124415

Lezak, M.D., Howieson, D.B., Loring, D.W., (2004). *Neuropsychological assessment*, fourth ed. Oxford University Press, New York.

Marcos, A. M. B. D. F., & Coelho, A. F. D. M. (2018). Communication relational outcomes in the insurance industry. *Asia Pacific Journal of Marketing and Logistics*, Volume 30 No. 5. https://doi.org/10.1108/APJML-10-2017-0235

Martaida, T., Bukit, N., Eva, ;, & Ginting, M. (2017). The Effect of Discovery Learning Model on Student's Critical Thinking and Cognitive Ability in Junior High School. *IOSR Journal of Research & Method in Education*, 7(6), 1–08. https://doi.org/10.9790/73880706010108

Mayangsari, M, D., dan Astuti, J, P. (2018). Faktor Yang Mempengaruhi Kinerja Kognitif Pada Mahasiswa Di Tinjau Dari Pengaturan Ruang Kelas Factors Affecting CP On Students In The Review Of The Classrom Setting. *Jurnal Ecopsy*, Volume 5 Nomor 3, http://dx.doi.org/10.20527/ecopsy.v5i3.5568

Moore, M. G., & Kearsley, G. (2012). *Distance education: A systems view of online learning*. Belmont, CA: Wadsworth.

Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. *Social Sciences & Humanities Open*, 3(1), 100101. https://doi.org/10.1016/j.ssaho.2020.100101

Ng EMW (2012). OCL. In: Seel NM (ed) *Encyclopedia of the Sciences of Learning*. Springer, Boston, MA. https://doi.org/10.1007/978-1-4419-1428-6_459

Nur Agung, Surtikanti, & OP. (2020). Students' Perception of Online Learning during COVID-19 Pandemic: A Case Study on the English Students of STKIP Pamane Talino. *Soshum: Jurnal Sosial Dan Humaniora*, 10(2), 225-235. doi:10.31940/soshum.v10i2.1316

Pattyn, N., Neyt, X., Henderickx, D., & Soetens, E. (2008). A psychophysiological investigation of vigilance decrement: Boredom or cognitive fatigue? *Physiology & Behavior*, 93(1-2), 369-378. https://doi.org/10.1016/j.physbeh.2007.09.016

Purwanto, (2015). Pengembang Teknologi Pembelajaran: Kebutuhan Peluang dan Tantangan di Indonesia. *Jakarta: Pustekkom Kemdikbud, Jurnal Teknodik* Vol. 19 - Nomor 2, Agustus 2015. https://doi.org/10.32550/teknodik.v19i2.157

Putra, A., & Patmaningrum, D. A. (2018). Pengaruh Youtube di Smartphone Terhadap Perkembangan Kemampuan Komunikasi Interpersonal Anak. *Jurnal Penelitian Komunikasi*, *21*(2). http://www.bppkibandung.id/index.php/jpk/article/viewFile/589/303

Qodriah, L, and Rakhma, D. (2021). IC between Teachers and Students in Forming the Character of High School Students When the New Era Covid-19 is Normal in Tangerang District (Case Study of SMAN 30 Tangerang Regency*). Budapest International Research and Critics Institute-Journal (BIRCI-Journal).* Volume 4, No 4. https://doi.org/10.33258/birci.v4i4.2894

Razali, S., N, Shahbodin, F., Ahmad, M., H., & Noor, H., A., M. (2016). Measuring Validity and Reliability of Perception of OCL Questionnaire Using Rasch Model. *International Journal on Advanced Science Engineering Information and Technology*. Vol.6 (6). https://www.researchgate.net/profile/Sharifah-Nadiyah-Razali/publication/311917286_Measuring_Validity_And_Reliability_of_Perception_of_Online_Collaborative_Learning_Questionnaire_Using_Rasch_Model/links/5c7b92af92851c69504f21d4/Measuring-Validity-And-Reliability-of-Perception-of-Online-Collaborative-Learning-Questionnaire-Using-Rasch-Model.pdf

Reisberg, D., (2006). *Cognition: Exploring the Science of the Mind*. W.W. Norton and Company, New York.

Rubin, R. B., & Martin, M. M. (1994). Development of a measure of IC competence. Communication Research Reports, 11(1), 33–44. https://doi.org/10.1080/08824099409359938

Sadtyadi, H., & Paramita, S. (2022). Analysis of Academic IC Factors in the Covid-19 Pandemic Period of Buddhist College Students. *Journal of Educational and Social Research*, 12(1), 144. https://doi.org/10.36941/jesr-2022-0013

Schmitt, B.H. (1999) Experiential Marketing. *Journal of Marketing Management*, 15, 53-67. http://dx.doi.org/10.1362/026725799784870496

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. john wiley & sons.

Shan, M., Wen-bo, Y., & Shan, M. (2018). College Students' IC from the Perspective of Social Exchange Theory. 1st International Conference on Contemporary Education and Economic

Development (CEED 2018) College, 221(Ceed), 523–527. https://doi.org/10.2991/ceed-18.2018.101

Sugino, C. (2021). Student perceptions of a synchronous online cooperative learning course in a Japanese women's university during the COVID-19 pandemic. *Education Sciences*, 11(5), 1–19. https://doi.org/10.3390/educsci11050231

Sukarna, T., F. (2021). The Effect of Student's IC Skills on Student's Learning Outcomes In Mechanical Engineering Subject. Journal of Architectural Research and Education. Vol 3 (No.2). doi:10.17509/jare.v3i2.37402

Sun, Y., & Gao, F. (2020). An investigation of the effect of intrinsic motivation on students ' intention to use mobile devices in language learning. *Educational Technology Research and Development*, 68(3), 1181–1198. https://doi.org/10.1007/s11423-019-09733-9

Suranto, A. W. (2011). Komunikasi Interpersonal. Yogyakarta: Ar-Ruzz Media.

Teo, T., Zhou, M., Fan, A. C. W., & Huang, F. (2019). Factors that affect university students' intention to use Moodle: a study in Macau. *Educational Technology Research and Development*, 67(3), 749–766. https://doi.org/10.1007/s11423-019-09650-x

Tuerah, P., Pangalila, T., Najoan, M., & Korompis, E. (2019). Effects of IC; Work Ethic and Leadership Style towards Junior High School Teacher Performance in the City of Tomohon. Proceedings of the International Conference on Social Science 2019 (ICSS 2019), 383(Icss), 676–681. https://doi.org/10.2991/icss19.2019.94

Utami, S., Maftukhah, I., Tusyanah, T., Sakitri, W., & Wahyuningrum, I. F. S. (2022). Promoting Collaborative Learning in Higher Education in A Large Class Size. *LEAD (Language, Education and Development)*, *2*(1), 45-57.https://doi.org/10.20884/1.lead.2022.2.1.5500

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 425-478. https://doi.org/10.2307/30036540

Verbitskaya, L. A., Malykh, S. B., Zinchenko, Y. P., & Tikhomirova, T. N. (2015). Cognitive predictors of success in learning Russian. Psychology in Russia: State of the Art, 8(4), 91-100. http://dx.doi.org/10.11621/pir.2015.0408

Vygotsky, L. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Wahyudin, A. (2015). *Metodologi Penelitian* (Penelitian Bisnis & Pendidikan).

Wongwatkit, C., Panjaburee, P., Srisawasdi, N., & Seprum, P. (2020). Moderating effects of gender differences on the relationships between perceived learning support, intention to use, and learning performance in a personalized E-lEarning. Journal of Computers in Education, 7(2), 229-255. https://doi.org/10.1007/s40692-020-00154-9

Yanto, H., Fam, S. F., Baroroh, N., & Jati, K. W. (2018). Graduates'accounting Competencies in Global Business: Perceptions of Indonesian Practitioners and Academics. *Academy of Accounting and Financial Studies Journal*, *22*(3), 1-17. https://www.abacademies.org/articles/graduates-accounting-competencies-in-global-business-perceptions-of-indonesian-practitioners-and-academics-7333.html

Yanto, H; Yuliana, E; Wee, M. Sodikun, Sykur, S. (2020). Strategies for Building Communication and Negotiation Competencies for Prospective Accountants. *Humanities & Social Sciences Reviews*, Vol. 8(1), 864-872, Available at SSRN: https://ssrn.com/abstract=3556357

Yun, H., Kim, S., and Chung, E., K. (2021). Exploring the Structural Relationships between Medical Students' Motivational Regulation, Cognitive Learning, and Academic Performance in Online Learning. Korean Journal of Medical Education. 33 (2): 115-124. doi: 10.3946/kjme.2021.193

Zgheib, A., M., Ali, A., and Sabra, R. (2021). Experience with Forced Transition to Online Learning During The COVID-19 Pandemic: Students' CP and Their Perceptions of Teaching. The Asia Pacific Scholar, Vol. 6 No. 3. https://doi.org/10.29060/TAPS.2021-6-3/OA2377

Tusyanah Tusyanah is professor at Universitas Negeri Semarang.

Contact Address: tusyanah@mail.unnes.ac.id

CREATIVE COMMONS LICENCE AGREEMENT

Please email us a copy of the completed form, and additionally send us by post a signed copy

Date: January 21, 2023

Your Name: Tusyanah Tusyanah

Organisation Name: Universitas Negeri Semarang

Your Position: Lecturer

Article title: The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance

Author(s)' names (if more than one): Wijang Sakitri, Ismiyati Ismiyati, Fransisca Rahmawati Indira, Edy Suryanto

Journal: International Journal of Sociology of Education

Your Email: tusyanah@mail.unnes.ac.id

Your Telephone: +62 895424005195

Your Postal Address: Sekaran Campus, Universitas Negeri Semarang, Gunungpati 50229, Semarang City, Indonesia

I agree that the free of charge, online documents of the above-named organisation can by used under the conditions of the "Attribution-Non Commercial-No Derivatives 2.5" Creative Commons licence, a copy of which I have read.

I declare that the article submitted and accepted for publication is original and has not been sent simultaneously under consideration - either in whole or in part - for publication elsewhere.

I agree that the article submitted and accepted for publication will be indexed in other databases (DOAJ, Crossref, etc.), as well as, I accept it.

Signature:

Tusyanah

Hipatia Press contact details:

Elisenda Giner Gota

C/ Claramunt, num. 4, local 2,

08030 Barcelona

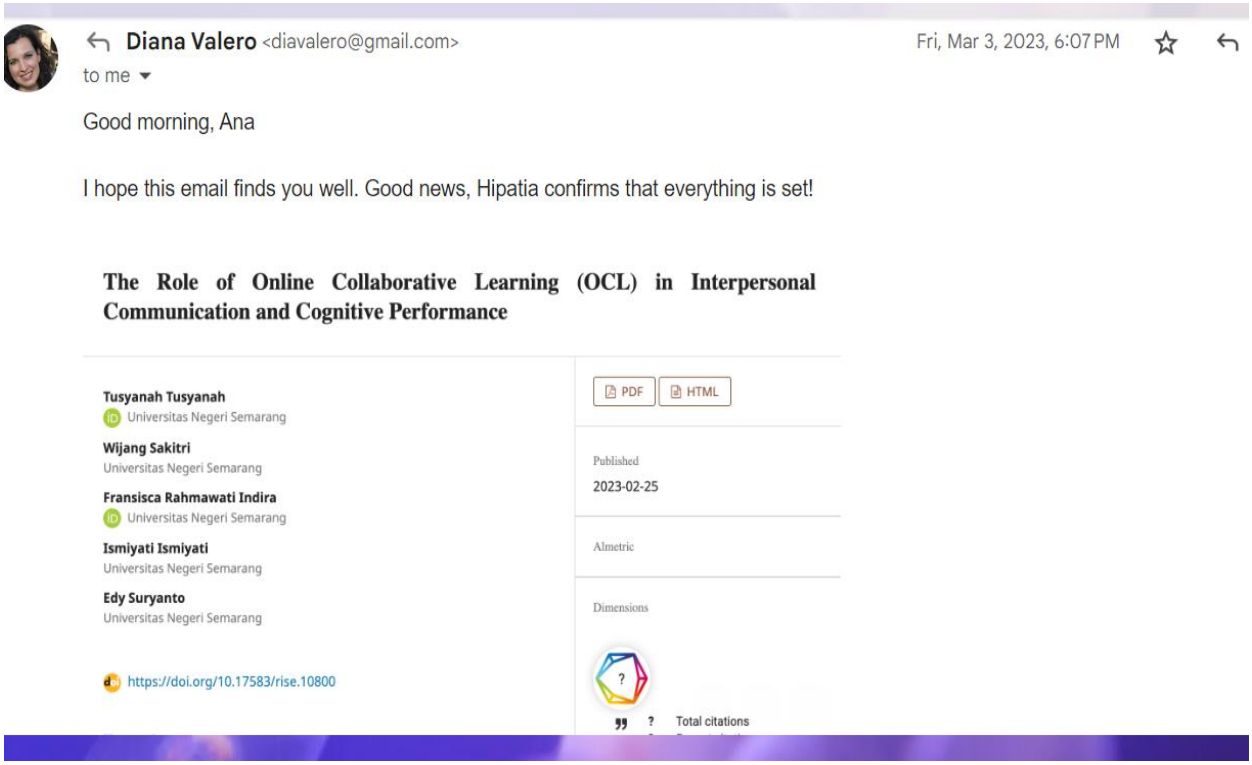
SPAIN

Email: info@hipatiaeditorial.com

Tel +34 933021226

www.hipatiapress.com

6. Bukti bahwa Artikel sudah published secara online



Diana Valero <diavalero@gmail.com> Fri, Mar 3, 2023, 6:07 PM

to me

Good morning, Ana

I hope this email finds you well. Good news, Hipatia confirms that everything is set!

The Role of Online Collaborative Learning (OCL) in Interpersonal Communication and Cognitive Performance

Tusyanah Tusyanah
Universitas Negeri Semarang
Wijang Sakitri
Universitas Negeri Semarang
Fransisca Rahmawati Indira
Universitas Negeri Semarang
Ismiyati Ismiyati
Universitas Negeri Semarang
Edy Suryanto
Universitas Negeri Semarang

https://doi.org/10.17583/rise.10800

PDF HTML

Published
2023-02-25

Almetric

Dimensions

Total citations