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How Do They Interact? Exploring Issues of Interaction Forms in an Online Writing Classroom

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Abstract

As the 21st century progresses, there is a growing emphasis on equipping students with essential skills, including writing, which is considered crucial to master. Online writing has become particularly significant in fostering this skill, as advanced technology enhances classroom activities and creates new opportunities for interaction between lecturers and students. This study aimed to assess the levels of six types of interaction, identify the forms of interaction students value most, determine the forms most frequently conducted by lecturers, and explore the benefits of these interactions in an online writing course. This study utilized a sequential explanatory design involving 122 respondents. Data were collected using two research instruments: a questionnaire and interviews. The findings revealed that respondents demonstrated two preferences for a high level of interaction, both of which showed a notable increase in the six forms of interaction. Among these, four types of interaction were perceived by students as playing a critical role in their online writing activities. However, only three forms of interaction were identified as being frequently implemented by the lecturer, reflecting an emphasis on student-centred learning. Each type of interaction was acknowledged as contributing distinct benefits to the students. This study underlines the importance of adopting diverse and student-centred interactions in online writing courses to enhance student engagement and learning outcomes.

Keywords: E-learning, online writing, student-centred learning, student interaction, virtue.

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1. INTRODUCTION

Learning in the 21st century is incredibly unique due to the advancement of technology, which is now extensively used in all life areas. Technology transforms not only how people communicate, but also the teaching and learning framework (Leh et al., 2005). Technology developments are the main characteristic of all paradigm changes in 21st-century learning (Farisi, 2016; Nacu et al., 2018). Specifically, Asadi et al. (2019) stated that the development of technology has changed the environment of teaching and learning as well as has created new teaching and learning types. It has also created the recent phenomenon of digital technology penetration into learning and society internetisation (Mynbayeva et al., 2018).

As the learning paradigm is shifting through the use of technology, a new form of learning has been born and known as online learning. Online learning is a type of education that takes place over the Internet. The term 'online learning' was first initiated in 1995 when a web-based system, known as WebCT, was established as the first Learning Management System (LMS) (Singh & Thurman, 2019). It is further related to catalysing the pedagogical shift in how teachers teach and students learn. Additionally, online learning can also be defined as the expenditure of the internet to engage and improve the interactions between the teacher and their students which covers synchronous and asynchronous modes of interaction (Bair, 2011; Nacu et al., 2018).

Moreover, in the aftermath of the COVID-19 pandemic and the context of Indonesian universities, the teaching and learning process had been typically conducted within online learning settings, including writing courses, especially within technical writing programs (Virtue, 2017). Writing courses conducted online have indispensably provided both opportunities and challenges for students. One of the opportunities is allowing the participants to collapse space and time. (Anderson, 2004). The delivery method of online writing enables flexible access, regardless of the time and space boundaries. Moreover, this type of learning also promotes higher-order thinking which links the students with new insights and knowledge, helping them to acquire meaningful learning experiences (Anderson, 2004; Haro et al., 2018). Next, Nasihah and Senta (2022) identified two key challenges in online writing classes: unstable internet connections and difficulties in guiding students through the writing process. Similarly, Tarrayo et al. (2022) also revealed that technical challenges, such as limited internet access and bandwidth issues, disrupted the flow of the online writing classes.

The success of online writing courses is intertwined with interactions. The term interaction is used to describe diverse types of interchange between the actors and objects related to teaching and learning (Anderson, 2004). Interactions can be classified into six primary forms; student-student, student-lecturer, student-content, lecturer-content, lecturer-lecturer, and content-content (Anderson & Garrison, 1998; Kuo et al., 2014; Rhode, 2009; Swan, 2001). These six modes of interaction function in a manner that is dependent on one another in practice (Swan, 2001). Interaction becomes a crucial phenomenon which needs further detailed investigation and analysis, particularly as it plays one key role in nowadays education. This is in line with Vygotsky's Zone of Proximal Development (ZPD) theory (1978) which highlights how important social interactions are for supporting cognitive growth. Vygotsky (1978) posited that learning occurs most effectively when students engage in collaborative interactions with more knowledgeable peers or teachers. Kozulin (2015) also supported Vygotsky's ZPD theory (1978), suggesting that cognitive development is fundamentally a social process, where language and interaction are essential tools for learning.

Song et al. (2019) stated that poor interaction opportunities for students could cause the students' low participation in online learning. Similarly, it also happens when the students are overwhelmed by the interactions that occur in online learning (Mehall, 2020). It has been argued that studying in an online education program emphasises the physical absence of the teacher, which becomes a disruption for the students (Borba et al., 2018), as does the limited physical interactions with their classmates during learning (Swan, 2001). Another point to ponder is how interactions can be possibly sustained, especially due to the educational benefit of interactions within online learning (Mehall, 2020; Pineteh, 2012).

A study by [Monalisa \(2017\)](#) specifically investigated the interactions in offline EFL writing classes. She found that oral and written interactions facilitated the students' learning, and it was found from both student-student and student-lecturer interaction. Another study by [Harjanto et al. \(2022\)](#) figured out that teacher-student interaction and student-student interaction were implemented in the online writing class to enhance the pre-service English teachers' engagement and writing skills. In addition, [Riis-Johansen and Myran \(2023\)](#) investigated interaction patterns in early writing instruction and found out that the students' interaction elicits many benefits, such as practice composing texts and experience being writers in a writing community.

Based on the previous research, interaction has constantly been found to be an essential element for having a meaningful learning experience in writing class. Therefore, it remains crucial to investigate the interactions that occurred during the online writing. Previous studies by [Monalisa \(2017\)](#), [Harjanto et al. \(2022\)](#) and [Riis-Johansen and Myran \(2023\)](#) have investigated general interactions which have mostly covered the student-student interaction and student-lecturer interaction as well as the merits of having comprehensive interactions that the students obtained. The six types of interaction in online writing classes remain unexplored. Therefore, this current study highlights the necessity and demand for research on interactions in online writing classes with the following research questions:

1. How do the students rate the level of the six types of interaction in the online writing class?
2. What forms of interaction do the students value the most in the online writing class?
3. What forms of interaction does the lecturer conduct the most in the online writing class?
4. What are the virtues of virtual interactions in the online writing class?

2. LITERATURE REVIEW

2.1 Online Writing Classroom

Online writing classrooms have become increasingly prevalent in recent years, driven by the rise of online education as well as the need for flexible and accessible writing instruction. Several researchers have shown that online writing classrooms can be as effective as traditional face-to-face classes in improving students' writing skills. A study by [Gaytan and McEwen \(2007\)](#) found that students in online writing courses performed equally well as those in face-to-face courses, particularly when it came to writing assignments and assessments. Similarly, [Hewett \(2015\)](#) reported that online writing instruction can lead to significant improvements in the students' writing abilities, provided that the course design and delivery are both well-structured. These studies prove that the online writing classroom is as preferred as the offline writing classroom. While online writing classrooms offer numerous benefits, they also present challenges that need to be addressed. One major challenge is the lack of immediate face-to-face interaction, which can hinder the development of a supportive learning community ([Boyd, 2008](#)). Additionally, providing effective feedback and facilitating peer review can be more challenging in an online environment ([Ene & Upton, 2018](#)). These challenges are necessary to solve since they are highly related to the success of the online writing classroom.

To overcome these challenges and maximise the effectiveness of online writing classrooms, several best practices and strategies are suggested: (1) fostering a sense of community, which can be done by encouraging regular interactions, discussions, and peer feedback ([Palloff & Pratt, 2007](#)), (2) providing timely and meaningful feedback, which can be achieved by implementing strategies which cover audio or video feedback, rubrics, and peer reviews when giving feedback ([Ene & Upton, 2018](#)), (3) incorporating multimedia and multimodal elements which can enrich the learning experience and cater to different learning styles ([Hewett, 2015](#)), and (4) encouraging self-regulated learning, which can be achieved by providing opportunities for goal-setting, self-evaluation, and metacognitive strategies ([Inayati et al., 2021](#)). These four aforementioned strategies would be effective if both teachers and students were aware of the significant effects of interaction toward learning.

2.2 Interaction Forms

Online interactions have become an increasingly important area of study. This assertion has been supported by several researchers who have explored the benefits of online interactions. In educational settings, interactions promote a sense of teaching presence that is crucial for enhancing students' engagement and satisfaction. This is supported by [Martin and Parker \(2014\)](#), who claimed that the online interaction between students and instructors has been linked to improved learning outcomes and students' satisfaction. Moreover, interactions encourage an information exchange between participants. This enables the students to develop relationships as well as exchange information and support ([Miao & Ma, 2022](#)). Furthermore, in the context of virtual teams or online collaborative works, interaction and communication are critical for coordination, knowledge sharing, trust-building, and effective teamwork ([Morgan et al., 2014](#)).

Six types of interaction forms have been identified in online environments ([Anderson & Garrison, 1998, p. 6](#); [Kuo et al., 2014, p. 36](#); [Swan 2001, p. 308](#)):

1. Student-Student Interaction: This involves interaction among the students, such as peer discussion, collaborative work, idea and resource sharing, and peer feedback.
2. Student-Lecturer Interaction: This refers to the communication and interaction between the students and instructors.
3. Student-Content Interaction: This type of interaction focuses on how students engage with the course materials, readings, assignments, and other instructional resources provided in the online environment.
4. Lecturer-Lecturer Interaction: This refers to interaction and collaboration between instructors and lecturers themselves, such as co-teaching a course, sharing resources and best practices, and providing peer feedback.
5. Lecturer-Content Interaction: This involves the interaction between the instructor or lecturer and the course content or material. It includes activities of creating the material, modifying the course content, and organising the content within the learning management system.
6. Content-Content Interaction: This refers to the interconnection or relationship between different content elements within a course or across multiple courses.

These various forms of interaction are considered essential as a part of creating meaningful and effective online learning experiences as well as fostering engagement, collaboration, and knowledge construction between students and lecturers ([Jung et al., 2002](#); [Keengwe & Schnellert, 2012](#)). Furthermore, these interactions create a dynamic learning environment that supports the students' academic and social development. Thus, lecturers should optimise these interactions to achieve and enhance the effectiveness of online learning experiences.

3. METHODS

3.1 Research Design

This study utilized a mixed-method approach, specifically a sequential explanatory design, where quantitative data were collected in the first phase, followed by qualitative data in the second phase ([Creswell, 2002](#)). Initially, a questionnaire was administered to gather students' responses regarding their thoughts and experiences in an online writing class. To complement and deepen the quantitative findings, a qualitative approach was employed in the second phase, using interview protocols to obtain detailed insights in the participants' own words.

3.2 Context and Participants

The participants in this study included sophomore students taking an online writing course offered by the Study Program of English Language Education, Faculty of Teacher Training and Education, Universitas Mahasaraswati, Denpasar. It was a four-credit course conducted over 16 weeks during the semester with a fully online system. This meant that the participants never met

their colleagues or the lecturers. There were 122 students (94 females and 28 males) involved as the research participants. Then, 20 respondents were willing to contribute further to this study, and so they were selected for the in-depth interviews. The respondents of this study were diverse in terms of gender, learning style, and social background.

3.3 Research Instruments

To obtain a rich array of data, two techniques of data collection were conducted, namely a questionnaire and an interview. The quantitative data was gathered through the administering of a questionnaire that surveyed the participants' points of view, providing valuable insights into online writing as viewed through their interactions. Afterward, the qualitative data was collected through interviews.

3.3.1 Questionnaire

The researchers adapted the existing questionnaires of [Anderson and Garrison \(1998\)](#), [Picciano \(2002\)](#), [Rhode \(2009\)](#), and [Kuo et al. \(2014\)](#) wherein the questionnaire was structured based on the six types of interaction (student-student, student-lecturer, student-content, lecturer-content, lecturer-lecturer, and content-content). The items were constructed as both close-ended and open-ended. There were 30 items for the close-ended questions and three items for the open-ended questions. Each close-ended item was coded using a Likert scale ranging from 1-5 points to determine the rating level of each interaction as the quantitative data. Meanwhile, the open-ended items were administered to collect the respondents' thoughts on the most valued interactions within the online writing class as the qualitative data. The questionnaire was distributed and accessed online via a Google Form. This form link was sent to all students through their class coordinator.

3.3.2 Interview

Semi-structured interviews were administered to collect valuable data which portrayed the real conditions and points of view of the students to address the second, third, and fourth research questions. The semi-structured interview questions consisted of three items, adapted from [Pineteh \(2012\)](#), to explore the interaction forms students valued the most, the interactions most frequently conducted by the lecturer, and the virtues of each interaction in the online writing class.

3.4 Data Analysis Techniques

To analyse the collected data, the quantitative data from the questionnaire were processed into percentages, which were then qualitatively interpreted to enrich the findings. Meanwhile, the interview data were analysed qualitatively following the steps outlined by [Miles et al. \(2014\)](#): data collection, reduction, presentation, interpretation, and verification. Initially, the data were gathered and reduced by eliminating redundancies to focus on key themes. The themes were organized, presented, and interpreted to yield meaningful insights.

4. RESULTS

This study examined the interaction phenomenon during an online writing course. Four primary research questions guided this investigation.

4.1 Interaction Level

The first finding addressed how students rated the level of the six types of interaction. To obtain the results, a series of items related to interaction forms were distributed to the respondents. The responses were recorded on a Likert scale ranging from 1 to 5 (Decreased (D), Somewhat

Decreased (SD), No Change (NC), Somewhat Increased (SI), and Increased (I)). Table 1 presents the findings.

Table 1. The level of the interactions.

No.	Interaction forms	Number of items range	Scales (%)				
			I	Si	Nc	Sd	D
1.	Student-student	10	54%	39%	6%	1%	0%
2.	Student-lecturer	7	55%	39%	5%	1%	0%
3.	Student-content	4	61%	35%	3%	1%	0%
4.	Lecturer-lecturer	3	23%	66%	11%	0%	0%
5.	Lecturer-content	4	27%	61%	11%	1%	0%
6.	Content-content	2	17%	69%	13%	0%	0%

Based on Table 1, students provided varied responses to each type of interaction. The student-student interaction was rated as “increased” by 54% of respondents, while the student-lecturer interaction received the same rating from 55%. Similarly, 61% rated the student-content interaction as “increased.” In contrast, the lecturer-lecturer interaction was predominantly rated as “somewhat increased” by 66%, the lecturer-content interaction as “somewhat increased” by 61%, and the content-content interaction as “somewhat increased” by 69%.

These findings highlighted the significance of all six types of interaction in the online writing class. They also suggested that content-content interaction could have been further enhanced with more dynamic exchanges to improve the overall online writing experience. By fostering these types of interaction, a more collaborative and supportive environment could have been cultivated, ultimately strengthening students’ writing skills in the context of online learning.

4.2 Valuable Forms of Interaction

The second finding addressed which forms of interaction students valued the most in online writing. The data revealed that students valued interactions with their peers, lecturers, and learning assignments. Among the interaction forms, four were identified as being predominantly valued by the respondents: student-student interaction, student-lecturer interaction, student-content interaction, and lecturer-content interaction. Each of these interactions was perceived as valuable, as evidenced by the various activities facilitated through them. The details are presented in Table 2.

Table 2. Valuable forms of interaction.

No.	Valuable interaction forms	Activities
1	Student-Student Interaction	Discussion Experience sharing Collaboration Peer review
2	Student-Lecturer Interaction	Example of the material Q and A Feedback Live interaction via video conference Lecturer guidance
3	Student-Content Interaction	Assignment Up-to-date material
4	Lecturer-Content Interaction	Learning material supply Learning instruction Learning method selection

In the online writing course, respondents stated that numerous activities encouraged student-student interaction. They learned new things through discussions, collaborated on tasks, reviewed each other’s work, and shared ideas. It is validated by the following interview script by one of the students:

- (1) The activities in student-student interaction can allow us to exchange knowledge while we review tasks together and share our thoughts to discover new information.

These interactions occurred via platforms such as WhatsApp, Zoom, Padlet, and Story Jumper through chatting, video calls, and commenting on assignment posts. Since face-to-face meetings were not possible, students organized detailed discussions to complete group and individual assignments using these applications.

Regarding student-lecturer interaction, most students noted that their lecturers employed various methods to explain the materials. They emphasized that clear explanations were pivotal in online writing classes, especially since understanding the materials was more challenging compared to traditional classroom settings. Another student stated that:

- (2) My lecturers explained the materials through different teaching methods and their explanations are important because it is in an online writing class.

The interviews also confirmed that the lecturers' explanations significantly contributed to students' comprehensive understanding of the materials.

In terms of student-content interaction, participants agreed that practical assignments were crucial for honing their skills and enhancing their learning experience. They highlighted the need for up-to-date materials and assignments to improve their knowledge and competencies. This is supported by the student mentioned that:

- (3) By practicing assignments we became better and the updated educational resources enabled easier learning of new material.

Additionally, the online writing course instilled discipline, as assignments had strict deadlines, and lecturers purposefully structured the timing of learning activities.

Lecturer-content interaction was also essential in creating an engaging learning environment. One of the students said that:

- (4) The lecturers gave helpful instructional materials and simple instructions, as well as effective teaching strategies which enhanced the online writing class. It is interesting.

By curating relevant materials, providing clear instructions, and employing effective teaching methods, lecturers significantly improved students' learning outcomes and engagement in the course.

Furthermore, Table 2 outlines the participants' perceptions of the four types of interaction in the online writing course. They emphasized the irreplaceable value of student-student interaction and noted that their engagement with the content could be enhanced by meaningful interactions with lecturers and peers. These interactions supported self-paced learning, making the course both challenging and enjoyable.

4.3 Most Conducted Interactions by the Lecturer

The third finding focused on the forms of interaction most commonly conducted by the lecturer in online writing classes. Participants noted that these interactions were closely related to lecturer-student engagement, student-student interactions, and lecturer-content interactions. It was revealed that all writing lecturers fully participated in the online writing course, engaging with students during pre-activity, whilst-activity, and post-activity phases. Similar to face-to-face classrooms, lecturers' active participation in the online setting demonstrated the effectiveness of conducting lectures without the constraints of location and distance. Students also highlighted the lecturers' discipline in managing the online course.

Additionally, lecturers were noted for preparing and conducting active online classes, incorporating a variety of activities. One of the students mentioned that:

- (5) Through many activities the lecturer maintained the active and engaging environment in the class. The lecturers did that to make us focus on our studies while enjoying the learning experience.

Despite using applications like WhatsApp, Schoology, and Google Classroom, the lecturers maintained interaction patterns similar to those in face-to-face sessions. They encouraged student engagement through group discussions, paired work, and individual activities that required student-teacher interaction.

Regarding student involvement in online discussions, most students agreed that nearly all participants engaged in every writing activity. However, a few students were passive and reluctant to engage critically in discussions, often acting as silent readers. In contrast, students who were more willing to participate found the interactions crucial, as their physical distance from the lecturers required extra effort to share ideas and address problems in the online writing class.

For lecturer-content interaction, two significant aspects were highlighted by the respondents. First, content instructions, both written and spoken, played a crucial role in facilitating student engagement with the learning content. Clear instructions helped students to complete assignments and engage with activities, enabling them to achieve the learning outcomes. Second, the assessment criteria in online writing were vital. The set of criteria guided lecturers in selecting relevant writing activities that best suited the students. These standards ensured fairness and clarity for both lecturers and students.

4.4 Virtues of the Virtual Interactions

The fourth finding focused on the virtues of virtual interactions in the online writing class. In the online writing environment, interactions served various purposes, with the primary focus for the lecturers often being the enhancement of students' outcomes. The students' perspectives, gathered through interviews, highlighted several values of interaction in the online writing class, revealing the virtues of the six forms of interaction in the context of this study. The virtues of student-student interaction are depicted in Figure 1.

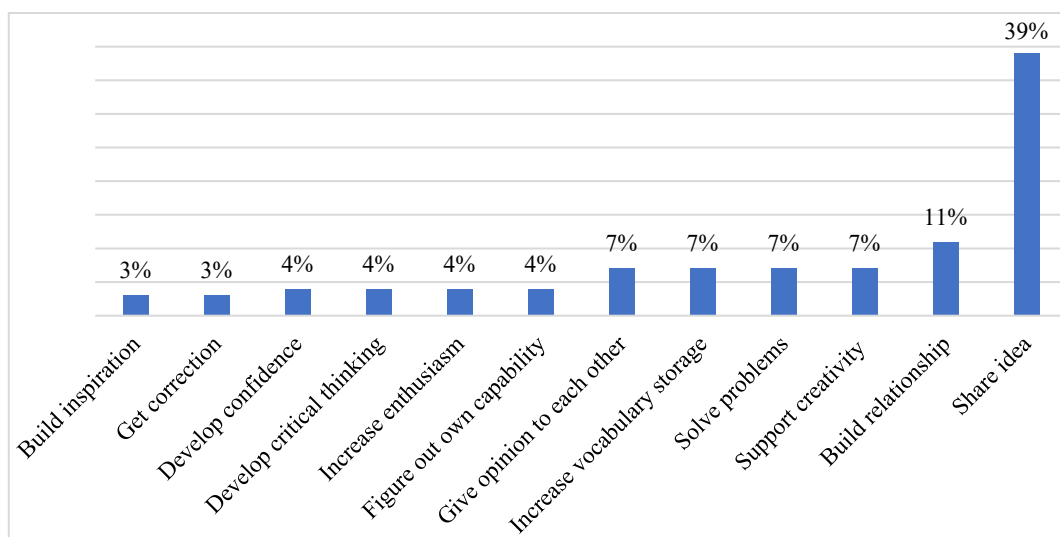


Figure 1. Virtues of the student-student interaction.

Figure 1 shows that sharing ideas was the dominant virtue of student-student interaction in the online writing class, accounting for 39% of the virtues. One of the students said that:

- (6) Sharing ideas proved to be most beneficial because it makes learning simpler while also enhancing its interest level. The experience enabled us to learn different points of view so we could enhance our written work.

In contrast, the least dominant virtues were building inspiration and receiving corrections, which each made up only 3% of the virtues. Figure 2 presents the visual representation of the virtues of student-lecturer interaction.

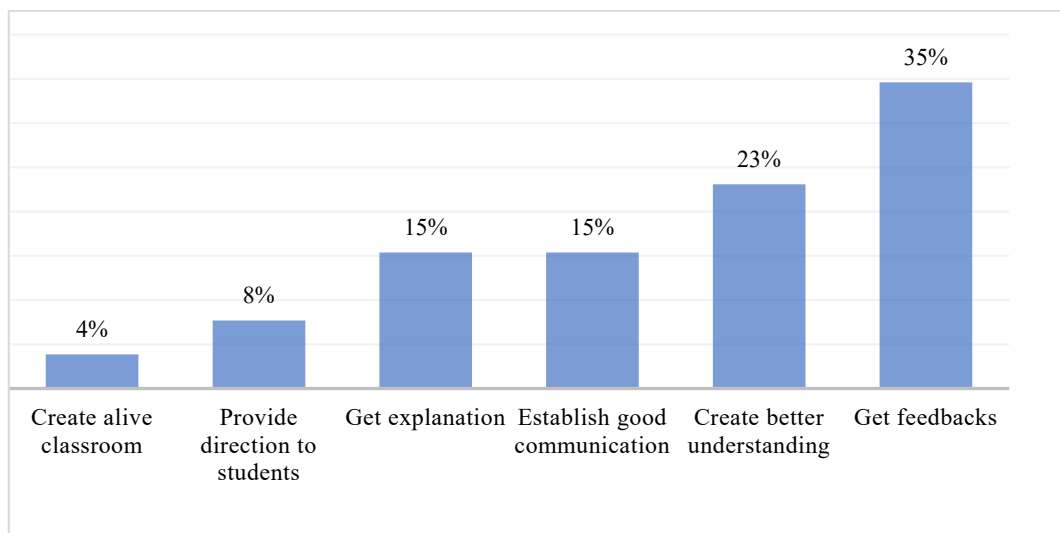


Figure 2. Virtues of the student-lecturer interaction.

Based on Figure 2, receiving feedback from the lecturer dominated the virtues of student-lecturer interaction, accounting for 35%. This indicated that students highly valued constructive feedback to support their academic progress in writing, which was supported by the following interview data:

- (7) The lecturer's feedback provided value because it helped enhance our writing. It also simplified the process of recognizing writing mistakes.

In contrast, creating a lively classroom was the least chosen virtue, comprising only 4%. This suggested that students prioritized academic-focused interactions over fostering a dynamic classroom atmosphere in the online writing class. Figure 3 visualizes the virtues of student-content interaction.

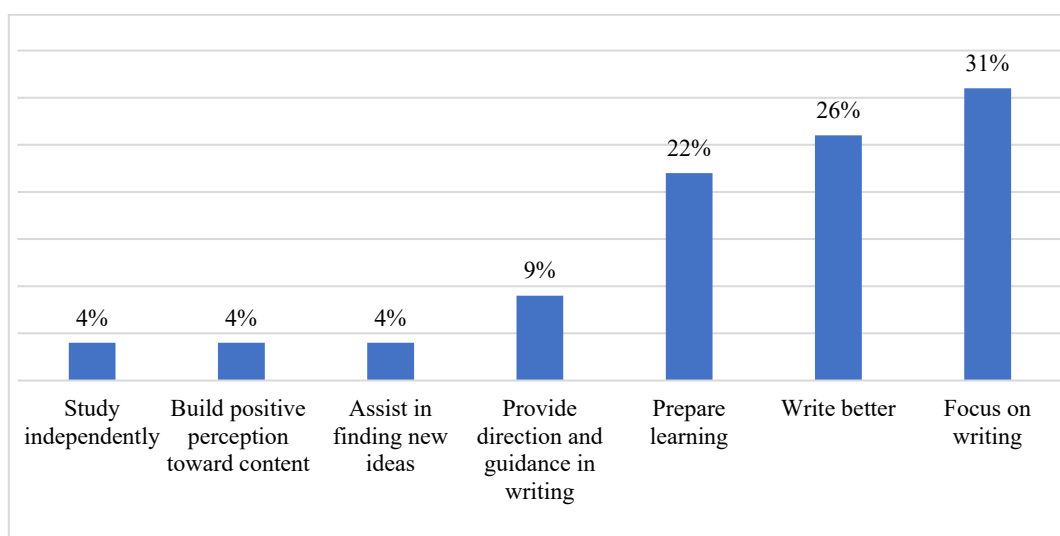


Figure 3. Virtues of the student-content interaction.

Figure 3 shows that student-content interaction had seven virtues according to the participants. Focusing on writing dominated all virtues, accounting for 31%. Studying

independently, building a positive perception toward content, and assisting in finding new ideas each accounted for 4%. One of the students said that:

- (8) My study time became more effective since the interaction helped me work independently while developing positive attitudes. The tools and methods I discovered transformed my education experience into something more exciting and simpler.

Figure 4 illustrates the virtues of lecturer-lecturer interaction as perceived by the participants.

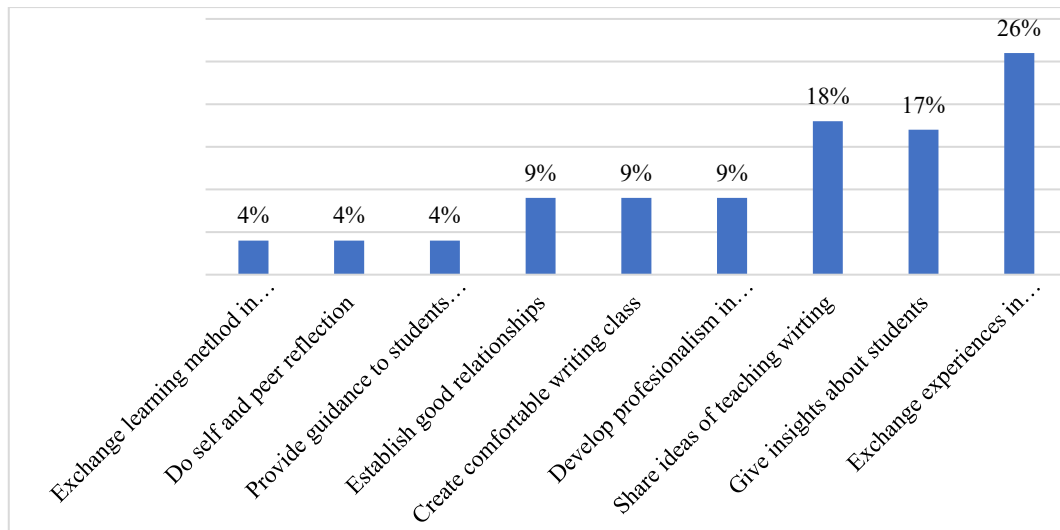


Figure 4. Virtues of the lecturer-lecturer interaction.

Based on Figure 4, lecturer-lecturer interaction had nine virtues. Exchanging experiences in the teaching of writing had the highest percentage (26%). One of the students said that:

- (9) The interaction between lecturers is valuable by permitting each of them to learn from their peers while gaining fresh insights for their practice.

The lowest percentages were for exchanging learning methods in writing, doing self and peer reflection, and providing guidance to students, each accounting for 4%. Figure 5 presents the virtues of lecturer-content interaction as identified by the participants.

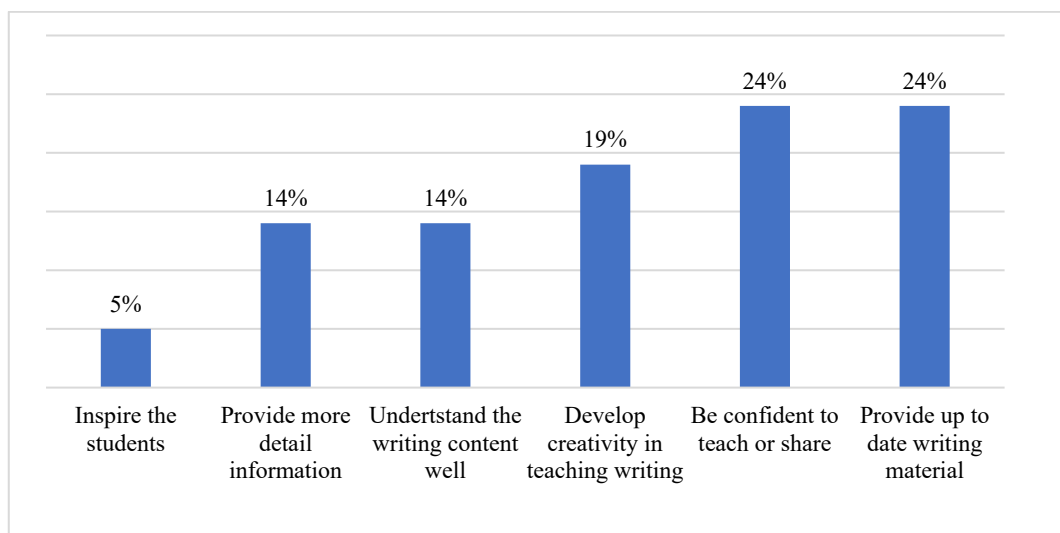


Figure 5. Virtues of the lecturer-content interaction.

Figure 5 reveals that lecturer-content interaction offered six virtues. Inspiring students in writing had the lowest percentage (5%); while providing up-to-date writing material and being confident to teach or share had the highest percentage (24%). This is supported by the following interview script:

(10) Our writing needs support when the lecturers are motivated to teach and update the learning material.

Taking advanced writing materials coupled with a teacher who displayed confidence improved our understanding and boosted our motivation to write. Figure 6 visualizes the virtues of content-content interaction.

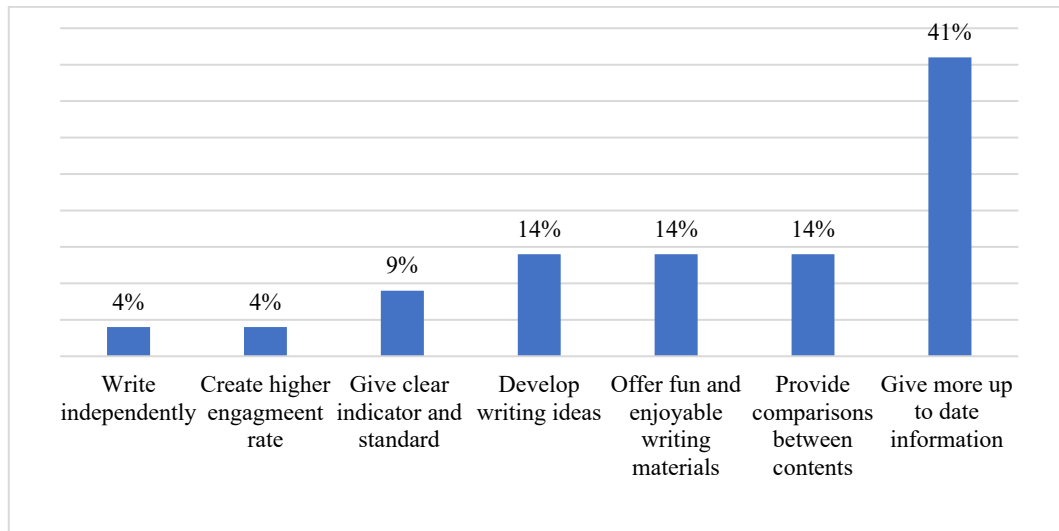


Figure 6. Virtues of the content-content interaction.

Figure 6 shows nine benefits recommended by the participants in content-content interaction. The dominant virtue was providing more up-to-date information related to writing, accounting for 41%. The interview script supports the previous finding:

(11) I think it's really important. Fresh materials and information enhance the meaning of the writing activity.

The least valued virtues, with the lowest percentage, were writing independently and creating a higher engagement rate, each at 4%.

5. DISCUSSION

The first finding of this study revealed that student-content interaction showed the highest increase in engagement, as indicated by 61% of participants. This suggests that the interaction between students and course materials, assignments, and other instructional resources is crucial. Consequently, lecturers must prepare quality and interactive content for students. The nature of student-content interaction and the provision of quality content also impacted students' learning behaviours. This finding aligns with [Mehall \(2020\)](#), who noted that increased interactions lead to better student outcomes, as these interactions provide valuable opportunities for students to build themselves, communicate, and share the meaning of what they learn. Furthermore, content-content interaction showed the lowest increase, with only 17% of participants selecting it as their preferred interaction form. However, 69% of participants reported some increase in content-content interaction, followed by lecturer-lecturer interaction (66%) and lecturer-content interaction (61%).

Picciano (2002) found a strong connection between the quality and quantity of interactions and students' performance in online courses. Students with increased interactions, such as participation in discussions, were more likely to engage thoughtfully and share their perspectives. Tu (2001) studied how social presence was affected by interactions in an online learning environment and found that intimacy positively correlated with instructional processes, including affective learning, teaching effectiveness, perceived cognitive learning, and information recall. As students deepen their mastery of essential knowledge and competencies, they also build expertise through interactions with peers and teachers (Goodwin & Twani, 2017), which helps them collaborate and demonstrate their learning mastery (Black et al., 2020).

The second finding highlighted that four of the six interaction forms: student-student, student-lecturer, student-content, and lecturer-content interactions, were considered valuable by the participants. These interactions involved various activities to engage students in the online writing class. Student-student interaction, for example, included discussions, sharing experiences, collaboration, and peer reviews. Participants found these activities beneficial as they learned appropriate ways to ask questions and share ideas. These interactions were organized through chatting, video calls, and commenting on each other's assignments. This aligns with Dharmadjaja and Tiatri (2021), who noted that students engage in group work, provide feedback, and share opinions with peers about learning materials. Čėsniėnė (2015) also emphasized that peer reviews help students develop critical evaluation skills to effectively assess flaws in an essay's argument. These activities were meaningful and supported by communication platforms used during the online interaction.

In student-lecturer interaction, five activities were conducted: requesting material examples, conducting Q&A sessions, receiving feedback, participating in live video conferences, and receiving guidance from the lecturer. The lecturer's full participation was integral to the learning process, occurring across pre-activity, during-activity, and post-activity phases. Adequate learning materials supported students in making sense of the content Rhode (2009) found that interactions with lecturers played a significant role in students' overall online learning experiences, further enhanced by the use of technology in teaching. Swan (2001) also revealed that students with more lecturer interactions were more satisfied with their courses.

The interaction between students and lecturers was more student-centred when technology was integrated into lessons. Carliner and Shank (2008) stated that technology enhances online learning by optimizing time management. The intersection of technology and online learning provides an innovative teaching and learning environment (Inoue, 2010). Kayalis and Natsina (2010) argued that aligning technology with online learning helps students connect with prior knowledge and engage in the process of meaning-making, sharing their understanding and challenges throughout the online learning process.

Student-content interaction requires students to complete assignments and gather up-to-date materials to support their work. This interaction was valuable as it kept students focused and on track, aligning them with the standards and indicators outlined in the provided rubric. Access to current materials and trusted websites helped students develop their ideas into well-written compositions. Furthermore, lecturer-content interaction was also perceived as valuable by participants, as it facilitated the provision of relevant learning materials and trusted resources. This interaction enriched the online writing activities, allowing students to explore their writing capabilities. Learning instructions from the lecturer served as a framework to guide students' online writing activities.

The third finding indicated that the most frequent interactions in the online writing class were student-lecturer, student-student, and lecturer-content interactions. Effective student-lecturer interactions, including discussions, feedback, and collaboration, were essential for updating and improving student work (Mafulah et al., 2023). Another study found that teachers' interactions with students had evolved, with collaboration being a key factor (Harper, 2018). This displayed the lecturer's ability to choose effective interaction patterns and apply targeted educational strategies to achieve learning objectives.

The fourth finding identified the virtues of each interaction, as agreed upon by the students. Among all interaction forms, student-student interaction provided the most virtues, with

participants listing 12 virtues, ranging from building inspiration (lowest percentage) to sharing ideas (highest percentage). This aligns with [Madland and Richards \(2016\)](#), who found that student-student interaction fosters collegial exchange, debate, and critical thinking. [Kolof \(2011\)](#) also highlighted the importance of student-student interaction in building a community within the online environment and helping students develop critical thinking and problem-solving skills.

Student-lecturer interaction, based on the findings, included six virtues: receiving feedback, creating a better understanding, establishing good communication, obtaining explanations, providing direction, and fostering an engaging classroom. [Krishnamurthi \(2000\)](#) noted that student-lecturer interaction in online classes typically involves asynchronous and synchronous discussions, motivating students to participate and engage with course materials. [Sun et al. \(2022\)](#) found that this interaction enhanced learning effects on two levels: interactive form and content, both of which impacted learning engagement and the psychological atmosphere. [Aydin \(2013\)](#) and [Gultom & Suhartini \(2020\)](#) emphasized that the student-teacher relationship provides an opportunity to explore students' capabilities and elevate their intelligence.

Student-content interaction resulted in seven virtues: focusing on writing, improving writing skills, preparing for study, providing direction, assisting in finding ideas, building positive perceptions, and fostering independent learning. This finding supports [Malinowski et al. \(2012\)](#) and [Fatma and Mustafa \(2016\)](#), who highlighted the central role of student-content interaction in shaping successful learning and academic achievement. [Kumar et al. \(2021\)](#) further noted that students engage in expressing and exchanging their understanding of course content. Various activities such as interacting with multimedia, watching instructional videos, and searching for information directly enhance learner autonomy ([Meri-Yilan, 2020](#)).

Lecturer-lecturer interaction provided nine virtues, emphasizing collaboration, mutual support, and knowledge exchange among lecturers. Teacher collaboration has positive impacts on each other and contributes to school improvement ("[The Importance of Teacher Collaboration](#)", 2017). Collaborative teaching supports professional development and enriches online writing content and teaching processes. Teachers working in teams can delegate tasks based on expertise, fostering accountability and contributing to school improvement ([Dobie & Anderson, 2015](#); [Henderson, 2021](#)).

Lecturer-content interaction provided six virtues, highlighting the importance of aligning content with learning objectives ([Kwak, 2017](#)). Technology and the increasing pace of knowledge generation enable lecturers to interact with content in multiple ways. For example, the flipped classroom model, supported by technological tools, fosters a deeper connection between students and content ([Babar & Hidayat, 2022](#)).

Finally, content-content interaction was valuable for students, offering seven virtues. This interaction facilitated self-regulation as students could revisit and reflect on materials at their own pace. The integration of technology in online writing made course content adaptable, allowing students to modify their presentations and navigate intelligently ([Meilleur, 2018](#)). [Anderson and Garrison \(1998\)](#) emphasized that technology provides accessible, updated information, supporting the credibility of the writing lesson.

The findings suggest key implications for enhancing interactions in online writing classrooms. Implementing all six interaction forms benefits higher education students, providing constructive perspectives for writing to lecturers and students to improve their awareness. Additionally, a supportive, user-friendly technological environment is crucial for applying these interactions effectively. Unlike traditional classrooms, online writing requires students to be confident in internet-based activities and motivated to self-regulate their writing process.

6. CONCLUSION

This study found that the respondents mainly answered in two ways for the high rate level of interaction, increased and somewhat increased about the six forms of interaction. Among all interaction forms, there were 4 interactions primarily valued by the respondents; the student-student interaction, student-lecturer interaction, student-content interaction, and lecturer-content

interaction. Then, there were three interactions frequently used by the lecturer; the lecturer-student interaction, student-student interaction, as well as lecturer-content interaction. The virtues, furthermore, were able to be captured in each interaction.

By the findings, it is obvious that interaction plays a fundamental role within online writing classes that integrate the use of technology into learning. The interaction forms are necessary because the exchange of ideas, collaboration, feedback delivery, and exposure to the creation of a united and coherent essay are the actions that constitute the doing of the process of writing to yield the writing product as a whole. However, this study did not investigate the student and technology interaction, as well as the lecturer and technology interaction, where technology, in fact, also occupies an essential role in supporting the triumph of the online teaching and learning process. Thus, further studies are suggested to investigate these interactions, particularly because the absence of these interactions creates gaps within the interactions among the students, lecturers, and content.

REFERENCES

- Anderson, T. (2004). *The theory and practice of online learning*. Athabasca University Press.
- Anderson, T., & Garrison, D. R. (1998). Learning in a networked world: New roles and responsibilities. In C. C. Gibson (Ed.), *Distance learners in higher education: Institutional responses for quality outcomes* (pp. 1-24). Atwood Publishing.
- Asadi, N., Khodabandeh, F., & Yekta, R. R. (2019). Comparing and contrasting the interactional performance of teachers and students in traditional and virtual classrooms of advanced writing courses in distance education university. *Turkish Online Journal of Distance Education*, 20(4), 135-148. <https://doi.org/10.17718/TOJDE.640552>
- Aydin, H. (2013). Interaction between teachers and students in online learning. *Journal of Environmental Protection and Ecology*, 14(3A), 1337-1352.
- Babar, S., & Hidayat, M. (2022). Online flipped classroom (e-FCR): Way forward in Covid 19 era. *Journal of Ayub Medical College*, 34(4), 1056-1057. <https://doi.org/10.55519/JAMC-04-S4-10282>
- Bair, D. E. (2011). Paradoxes of online teaching. *International Journal for the Scholarship of Teaching and Learning*, 5(2), Article 10. <https://doi.org/10.20429/ijstol.2011.050210>
- Black, A. L., Crimmins, G., Dwyer, R., & Lister, V. (2020). Engendering belonging: Thoughtful gatherings with/in online and virtual spaces. *Gender and Education*, 32(1), 115-129. <https://doi.org/10.1080/09540253.2019.1680808>
- Borba, M. C., Chiari, A. S. de S., & Almeida, H. R. F. L. de. (2018). Interactions in virtual learning environments: New roles for digital technology. *Educational Studies in Mathematics*, 98(3), 269-286. <https://doi.org/10.1007/s10649-018-9812-9>
- Boyd, P. W. (2008). Analyzing students' perceptions of their learning in online and hybrid first-year composition courses. *Computers and Composition*, 25(2), 224-243. <https://doi.org/10.1016/j.compcom.2008.01.002>
- Carliner, S., & Shank, P. (2008). *The e-learning handbook: Past promises, present challenges*. Pfeiffer.
- Čėsniénė, Ž. (2015). Effects of the peer-review method on writing proficiency. *Pedagogika*, 120(4), 61-72. <https://doi.org/10.15823/p.2015.038>
- Creswell, J. W. (2002). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Sage Publications, Inc.
- Dharmadjaja, P. N., & Tiatri, S. (2021). The effect of online interaction types and acceptance of technology factors on student satisfaction with online learning during the COVID-19 pandemic. In S. Tiatri & L. C. Seong (Eds.), *Proceedings of the International Conference on Economics, Business, Social, and Humanities (ICEBSH 2021)* (pp. 936-942). Atlantis Press. <https://doi.org/10.2991/assehr.k.210805.148>
- Dobie, T. E., & Anderson, E. R. (2015). Interaction in teacher communities: Three forms teachers use to express contrasting ideas in video clubs. *Teaching and Teacher Education*, 47, 230-

240. <https://doi.org/10.1016/j.tate.2015.01.003>
- Ene, E., & Upton, T. A. (2018). Synchronous and asynchronous teacher electronic feedback and learner uptake in ESL composition. *Journal of Second Language Writing*, 41, 1-13. <https://doi.org/10.1016/j.jslw.2018.05.005>
- Farisi, M. I. (2016). Developing 21st-century social studies skills through technology integration. *Turkish Online Journal of Distance Education*, 17(1), 16-30.
- Fatma, N., & Mustafa. (2016). The effects of student-content interaction on academic performance in distance-learning courses. *International Journal on New Trends in Education and Their Implications*, 7(3), 60-68.
- Gaytan, J., & McEwen, B. C. (2007). Effective online instructional and assessment strategies. *International Journal of Phytoremediation*, 21(1), 117-132. <https://doi.org/10.1080/08923640701341653>
- Goodwin, B. B., & Twani, E. (2017). *Let's rethink online learning*. McREL International.
- Gultom, A., & Suhartini. (2020). Student interaction, teacher competence, and technology in online learning: Does it create a meaningful learning? In A. Wiyarsi, W. S. B. Dwandaru, A. W. Subiantoro, A. Samsudin, & Pujianto (Eds.), *Proceedings of the 6th International Seminar on Science Education (ISSE 2020)* (pp. 169-180). Atlantis Press. <https://doi.org/10.2991/assehr.k.210326.024>
- Harjanto, A. K., Sumardi, & Marmanto, S. (2022). Classroom interaction: A case study in Indonesian pre-service English teachers' online writing course. *International Journal of Education and Social Science Research*, 5(3), 169-176. <https://doi.org/10.37500/ijessr.2022.5311>
- Haro, A. V., Noroozi, O., Biemans, H. J. A., & Mulder, M. (2018). The effects of an online learning environment with worked examples and peer feedback on students' argumentative essay writing and domain-specific knowledge acquisition in the field of biotechnology. *Journal of Biological Education*, 53(4), 390-398. <https://doi.org/10.1080/00219266.2018.1472132>
- Harper, B. (2018). Technology and teacher-student Interactions: A review of empirical research. *Journal of Research on Technology in Education*, 50(3), 214-225. <https://doi.org/10.1080/15391523.2018.1450690>
- Henderson, K. (2021, June 23). *Benefits of and strategies for teacher collaboration in strategies for teacher collaboration in MTSS*. Branching Minds. <https://www.branchingminds.com/blog/teacher-collaboration-mtss>
- Hewett, B. L. (2015). *Reading to learn and writing to teach: Literacy strategies for online writing instruction*. Bedford/St. Martin's.
- Inayati, N., Rachmadhani, R. A., & Utami, B. N. (2021). Student's strategies in online autonomous English language learning. *Journal of English Educators Society*, 6(1), 59-67. <https://doi.org/10.21070/jees.v6i1.1035>
- Inoue, Y. (2010). *Cases on online and blended learning technologies in higher education: Concepts and practices*. IGI Global.
- Jung, I., Choi, S., Lim, C., & Leem, J. (2002). Effects of different types of interaction on learning achievement, satisfaction and participation in web-based instruction. *Innovations in Education and Teaching International*, 39, 153-162. <https://doi.org/10.1080/13558000210121399>
- Kayalis, T., & Natsina, A. (2010). *Teaching literature at a distance: Open, online and blended learning*. Continuum International Publishing Group.
- Keengwe, J., & Schnellert, G. (2012). Fostering interaction to enhance learning in online learning environments. *International Journal of Information and Communication Technology Education*, 8(3), 28-35.
- Kollof, M. A. (2011). Strategies for effective student/student interaction in online courses. In *17th Annual Conference on Distance Teaching and Learning* (pp. 1-5). The Board of Regents of the University of Wisconsin System. <https://studylib.net/doc/18404369/strategies-for-effective-student-student-interaction-in-o>
- Kozulin, A. (2015). Vygotsky's theory of cognitive development. In J. D. Wright (Ed.),

- International encyclopedia of the social & behavioral sciences* (2nd ed., pp. 322-328). <https://doi.org/10.1016/B978-0-08-097086-8.23094-8>
- Krishnamurthi, M. (2000). Enhancing student-teacher interactions in internet-based courses. In *ASEE Annual Conference Proceedings* (pp. 2601-2610). Asee Peer. <https://doi.org/10.18260/1-2--8359>
- Kumar, P., Saxena, C., & Baber, H. (2021). Learner-content interaction in e-learning- the moderating role of perceived harm of COVID-19 in assessing the satisfaction of learners. *Smart Learning Environments*, 8(5), Article number 5. <https://doi.org/10.1186/s40561-021-00149-8>
- Kuo, Y. C., Walker, A. E., Schroder, K. E. E., & Belland, B. R. (2014). Interaction, internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *Internet and Higher Education*, 20(2014), 35-50. <https://doi.org/10.1016/j.iheduc.2013.10.001>
- Kwak, S. (2017). Approaches reflected in academic writing MOOCs. *International Review of Research in Open and Distributed Learning*, 18(3), 138-155. <https://doi.org/10.19173/irrodl.v18i3.2845>
- Leh, A. S. C., Kouba, B., & Davis, D. (2005). Twenty-first-century learning: Communities, interaction and ubiquitous computing. *Educational Media International*, 42(3), 237-250. <https://doi.org/10.1080/09523980500161296>
- Madland, C., & Richards, G. (2016). Enhancing student-student online interaction: Exploring the study buddy peer review activity. *International Review of Research in Open and Distance Learning*, 17(3), 158-175. <https://doi.org/10.19173/irrodl.v17i3.2179>
- Mafulah, S., Basthomi, Y., Cahyono, B. Y., & Suryati, N. (2023). Exploring Indonesian EFL teacher-student interactions in online learning. *Studies in English Language and Education*, 10(2), 686-703. <https://doi.org/10.24815/siele.v10i2.23804>
- Malinovski, T., Lazarova, M., & Trajkovik, V. (2012). Learner-content interaction in distance learning models: Students' experience while using learning management systems. *International Journal of Innovation in Education*, 1(4), 362-376. <https://doi.org/10.1504/ijie.2012.052737>
- Martin, F., & Parker, M. (2014). Use of synchronous virtual classrooms: Why, who, and how? *MERLOT Journal of Online Learning and Teaching*, 10(2), 192-210.
- Mehall, S. (2020). Purposeful interpersonal interaction in online learning: What is it and how is it measured? *Online Learning*, 24(1), 182-204. <https://doi.org/10.24059/olj.v24i1.2002>
- Meilleur, C. (2018, June 11). *Online learning: 6 types of interactions at play*. Knowledge One. <https://knowledgeone.ca/online-learning-6-types-of-interactions-at-play/>
- Meri-Yilan, S. (2020). Writing online dialogue journals and penzu for student-teacher interaction and autonomous learning: A research plan. In O. Viberg, J. Mynard, W. Peeters, & M. Saqr (Eds.), *Proceedings of the Harnessing the Potentials of Technology to Support Self-Directed Language Learning in Online Learning Settings Symposium (STELLA 2020)* (Article number 5). CEUR-WS. https://ceur-ws.org/Vol-2828/article_5.pdf
- Miao, J., & Ma, L. (2022). Students' online interaction, self-regulation, and learning engagement in higher education: The importance of social presence to online learning. *Frontiers in Psychology*, 13, 815220. <https://doi.org/10.3389/fpsyg.2022.815220>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage Publications, Inc.
- Monalisa. (2017). Interaction in EFL writing class: Lecturers' reflection. *Indonesian Journal of English Education*, 4(2), 144-155. <https://doi.org/10.15408/ijee.v4i2.8323>
- Morgan, L., Paucar-Caceres, A., & Wright, G. (2014). Leading effective global virtual teams: The consequences of methods of communication. *Systemic Practice and Action Research*, 27(1), 607-624. <https://doi.org/10.1007/s11213-014-9315-2>
- Mynbayeva, A., Sadvakassova, Z., & Askalova, B. (2018). Pedagogy of the twenty-first century: Innovative teaching methods. *New Pedagogical Challenges in the 21st Century - Contributions of Research in Education*, 3-20. <https://doi.org/10.5772/intechopen.72341>
- Nacu, D., Martin, C. K., & Pinkard, N. (2018). Designing for 21st-century learning online: A

- heuristic method to enable educator learning support roles. *Educational Technology Research and Development*, 66, 1029-1049. <https://doi.org/10.1007/s11423-018-9603-0>
- Nasihah, M., & Senta, A. N. (2022). Revealing the challenges and practical ways in teaching writing online. *Journal of English for Academic and Specific Purposes (JEASP)*, 5(1), 297-302. <https://doi.org/10.18860/jeasp.v5i1.16581>
- Palloff, R. M., & Pratt, K. (2007). *Building online learning communities: Effective strategies for the virtual classroom* (2nd ed.). Jossey-Bass.
- Picciano, A. G. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *JALN*, 6(1), 21-40. <https://doi.org/10.24059/olj.v6i1.1870>
- Pineteh, E. A. (2012). Using virtual interactions to enhance the teaching of communication skills to information technology students. *British Journal of Educational Technology*, 43(1), 85-96. <https://doi.org/10.1111/j.1467-8535.2011.01193.x>
- Rhode, J. F. (2009). Interaction equivalency in self-paced online learning environments: An exploration of learner preference. *The International Review of Research in Open and Distributed Learning*, 10(1), Article number 6. <https://doi.org/10.19173/irrodl.v10i1.603>
- Riis-Johansen, M. O., & Myran, I. H. (2023). Patterns in naturally occurring interactions in early writing instruction. *Journal of Early Childhood Literacy*. <https://doi.org/10.1177/14687984231213475>
- Saputra, F. (2019). *The classroom interaction between a teacher and the tenth-grade students at SMA Al-Falah Islam Jambi* [Unpublished master's thesis] UIN Sulthan Thaha Saifuddin Jambi.
- Singh, V., & Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988-2018). *American Journal of Distance Education*, 33(4), 289-306. <https://doi.org/10.1080/08923647.2019.1663082>
- Song, D., Rice, M., & Oh, E. Y. (2019). Participation in online courses and interaction with a virtual agent. *International Review of Research in Open and Distance Learning*, 20(1), 44-62. <https://doi.org/10.19173/irrodl.v20i1.3998>
- Sun, H. L., Sun, T., Sha, F. Y., Gu, X. Y., Hou, X. R., Zhu, F. Y., & Fang, P. T. (2022). The influence of teacher-student interaction on the effects of online learning: Based on a serial mediating model. *Frontiers in Psychology*, 13, 779217. <https://doi.org/10.3389/fpsyg.2022.779217>
- Swan, K. (2001). Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses. *Distance Education*, 22(2), 306-331. <https://doi.org/10.1080/0158791010220208>
- Tarrayo, V. N., Anudin, A. G., Mendoza, H. B., & Parungao-Callueng, E. S. (2022). Challenges and opportunities in teaching writing online amidst the pandemic: Voices from English language teachers in Philippine universities. *Australian Journal of Teacher Education*, 47(4), 74-90. <https://doi.org/10.14221/ajte.2022v47n4.5>
- The importance of teacher collaboration*. (2017, June 8). Arkansas State University. <https://degree.astate.edu/online-programs/education/master-of-science/ed-leadership/importance-of-teacher-collaboration/>
- Tu, C. H. (2001). How Chinese perceive social presence: An examination of interaction in online learning environment. *Educational Media International*, 38(1), 45-60. <https://doi.org/10.1080/09523980010021235>
- Virtue, D. (2017). Increasing student interaction in technical writing courses in online environments. *Business and Professional Communication Quarterly*, 80(2), 217-235. <https://doi.org/10.1177/2329490617689880>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press. <https://doi.org/10.2307/j.ctvjf9vz4>