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Unlocking the Potential of Global Learning: The Impact of Virtual Exchange Programs on Self-Efficacy

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Abstract

Global virtual teams (GVT) have emerged as a valuable model for facilitating virtual exchange (VE) in business and educational settings. A comprehensive four-year longitudinal study spanning from 2018 to 2021 investigated a model of self-efficacy that include discernment, resourcefulness, diverse options, creative thinking, fairness, emotional regulation, and culture. Our sample consisted of participants surveyed before the GVT experience (n=584) and after the GVT experience (n=399), representing learners from six countries. The results of the study unveiled several key findings: (a) self-efficacy was influenced by multiple factors, with fairness emerging as a more significant contributor after the GVT experience; (b) irrespective of the GVT experience, learners from individualist countries demonstrated higher levels of self-efficacy compared to those from collectivist countries, suggesting that cultural dimensions play a role in shaping learners' self-efficacy, regardless of their participation in GVT activities; and (c) when controlling for the pandemic, there was a specific impact to the learner as it related to self-efficacy and the experience of global learning. These insights contribute to our understanding of the intricate dynamics of self-efficacy in the realm of virtual exchange and provide valuable implications for educators, organizations, and policymakers seeking to enhance learner outcomes in global virtual team settings.

Introduction

Globalization, technology, and digitalization are three important business megatrends that have transformed our interactions and business practices in the twenty-first century. New approaches had to be swiftly created and applied in order to address the repercussions of COVID-19, ensuring that the quality and timeliness of service or product delivery remained intact while mitigating the impact of the virus (Moret et al., 2022). People from all walks of life, industries, and backgrounds were affected by the global pandemic's social, economic, and political turmoil, and we are still learning about the pandemic's impact on individual performance (Collings et al., 2021).

The influence of the COVID-19 pandemic on different sectors, particularly education, has been substantial (Acosta & Acosta, 2022). With the widespread closure of schools worldwide, an education crisis emerged, necessitating the exploration of alternative learning approaches. The swift integration of technology in the

teaching and learning process presented significant challenges for instructors and learners at all levels of education, and school administration. For instance, governments swiftly implemented health and safety guidelines, requiring schools to comply with them on short notice. Educators had to adapt to new teaching methods and concepts, while students lacking engagement and access to digital devices faced the risk of falling behind (Acosta & Acosta, 2022; Al-Ugaily, 2021; Liu & Cheng, 2021; Prabakar & Srinivasan, 2021).

Organizations all over the world have embraced remote working arrangements as a result of the worldwide physical separation measures enacted in response to the COVID-19 epidemic (World Economic Forum, 2020). During the pandemic, many people were forced to work remotely or in global virtual teams (GVTs) in international settings. GVTs are geographically dispersed groups of people working on a project, as well as teams that use internet-mediated communication to collaborate on common goals and are typically made up of people from diverse cultural backgrounds who have never worked together face-to-face (Taras et al., 2013). Although a growing number of studies have looked into the factors that influence GVT performance, theoretical and empirical research are still in their infancy, particularly with regard to the role of the COVID-19 component in GVT performance (Schlegel et al., 2022).

Companies' ability to operate on a global scale is becoming increasingly important as they face increased pressure to adapt to the demands of the new digital economy. Thus, online communication has become the standard method of interaction within and between businesses, and it provides the advantages of being a convenient and, most likely, the only cost-effective way to conduct international business. The benefits of doing business on a global scale and across cultural boundaries are substantial, but so are the challenges. As a result, ambiguity creates new challenges, unanticipated events, and even conflict, all of which impede progress toward achieving deliverables and goals.

Professionals in today's competitive global market require not only technical expertise, but also global and intercultural competencies, as well as the ability to collaborate effectively with others (Downey et al., 2006; Winberg et al., 2020; Petrovskaya & Shaposhnikov, 2020). To be more specific, there is an increasing demand for experienced globally-minded professionals who can manage projects and identify issues while working digitally with people from various cultural backgrounds (Mariasingam et al., 2008; "Asia Society," n.d., 2018). As a result of these advancements, an increasing number of business studies instructors in higher education are embracing virtual exchange and GVTs to equip and prepare students to interact and function digitally with partners, consumers, and other global stakeholders. According to O'Dowd (2021), the term "virtual exchange" encompasses various methods by which groups of learners engage in intercultural interaction and collaboration with partners from different cultural contexts or geographical locations, as an integral component of their coursework, with guidance from educators or experienced facilitators.

In the past, the concept of global learning was largely restricted to a limited number of students participating in study abroad programs. However, the Collaborative Online International Learning (COIL) approach, enables faculty members to engage in intercultural collaboration with colleagues from various institutions. COIL presents instructors with valuable opportunities to enhance their intercultural competencies, exchange insights, and find

potential research partners. Nonetheless, they must be prepared to overcome challenges such as time zone differences, cultural disparities, and technical issues. For students, online global learning opens doors to diverse cultures and enables them to develop language proficiency, communication skills, and subject-specific knowledge. The COVID-19 pandemic underscored the importance for universities to be prepared for online education (Kučerová, 2023).

The primary goal of this study was to assess students' perceptions of their own efficacy. The researchers wanted to see if the COVID-19 pandemic and the virtual interactive structure of GVTs affected students' perceptions of their own competence. Therefore, we focused our study on the following questions: What differences did emotional regulation, cognitive flexibility and openness, and student self-efficacy show before and after the GVT virtual exchange? Is the learner's perception of their self-efficacy influenced by this experience? If so, how specifically? Did the pandemic affect students' sense of self-efficacy? What did the pandemic teach us about how well individuals can handle unforeseen circumstances?

Literature Review

Online learning integrates digital technologies and devices to create accessible environments for education, promoting resource availability, student engagement, and stakeholder communication. Its definition varies based on context and focus. However, the rapid transition to fully online learning during the pandemic did not fully maximize its potential. Instead, it was primarily characterized as emergency remote teaching and learning, lacking the planning and design for online delivery. Emergency remote education involved quick adaptations using diverse technological solutions to ensure educational continuity during a global crisis, employing various technology levels. It's important to recognize that the pandemic-induced shift to online learning was an unplanned response to unforeseen circumstances, rather than an optimized online learning experience (Lampropoulos & Admiraal, 2023).

In contrast to the urgent shift to remote learning that occurred as a result of the pandemic, collaborative learning involves small groups of students studying together towards a shared objective. It emphasizes interaction, a common purpose, task completion, and learning as a collective. This approach is highly applicable to global virtual teams, which consist of geographically dispersed members collaborating using digital tools. Collaborative learning provides a structure for these teams to work together efficiently, capitalizing on the diverse strengths and expertise of each team member (Talan, 2021). As a result, student active engagement plays a significant role in achieving successful learning outcomes in an online collaborative learning environment and contributes to a more comprehensive and engaging learning experience (Altowairiki, 2021), as well as being integral to GVTs. By actively participating, addressing challenges, and reaping the benefits from global interaction, students can optimize their learning experience in an online collaborative setting.

The following sections review the theoretical constructs we used to assess the impact of cognitive flexibility and openness and emotional regulation on self-efficacy inside the GVT environment.

Understanding the Importance of Self-Efficacy

Bandura (2006) defined self-efficacy as an individual's belief in one's ability to cope successfully with specific circumstances. Self-efficacy beliefs have emerged as one of the psychological structures attesting to people's agentic power. These beliefs are assessments people make about their ability to deal successfully with certain obstacles and confront difficult circumstances. A person's self-efficacy refers to their belief in their ability to take the necessary steps to achieve their goals, particularly in the face of difficult circumstances or unexpected events. The ability of a person to act effectively in a stressful situation is thought to be closely related to their level of self-confidence (Agarwal et al. 2000; Bandura 2006; Alessandri et al. 2009; Wu et al., 2020). The confidence with which someone approaches and handles difficult tasks determines whether they use their skills effectively or ineffectively (Miloni et al., 2015).

Employee performance in the workplace, particularly in global and intercultural environments, is heavily reliant on self-efficacy. In an academic setting, self-efficacy refers to a student's belief in his or her ability to learn and complete a task, which leads to a more responsible and efficient approach to schoolwork. It influences affectivity and academic satisfaction by regulating academic behavior and external choices in students (Supervia et al., 2022). The studies on the effects of emotional control, cognitive openness, and flexibility on self-efficacy are clearly summarized in the literature. Furthermore, the learner's culture influences their sense of self-efficacy when dealing with people from other cultures. Individualist cultures such as those considered Western versus collectivist Eastern cultures, for example, differ in terms of a learner's self-efficacy by country (Klassen, 2004; Kharkhurin, 2014; Scholtz et al., 2002; Wu, 2009).

Self-efficacy influences a person's effort in unfamiliar and difficult situations, as well as their ability to deal with setbacks. Individuals with higher self-efficacy set and stick to more ambitious goals, focusing on their strengths and working harder even when they fail (de Melo et al., 2021). As a result, self-efficacy is a confident assessment of one's ability to deal with life's challenges. Competence facilitates cognitive processes and performance in a wide range of situations, including decision-making and academic success. Self-assured people choose more difficult tasks and set higher goals. It includes self-assurance in one's ability to deal with a wide range of difficult or unexpected situations. The ability to deal with a wide range of stressful situations is referred to as general self-efficacy (Schwarzer & Scholz, 2000).

Experiences of mastery or enactment demonstrate competence and boost self-efficacy (Klassen, 2004). Because of its adaptability, it is a variable that can be altered on an individual basis through training and coaching. It is a reliable predictor of the success of intercultural communication. Positive experiences are one way to boost self-efficacy; as a result, encountering intercultural settings through academic exchange and other foreign encounters may boost self-efficacy and open up new opportunities for experiences in the future (de Melo et al., 2021). People will differ in terms of their sense of self-efficacy because they differ in terms of their personality traits and cognitive capacities, necessitating cross-cultural adaptation in a global context. Studies have supported the importance of experiences, particularly the mastery experience as the most potent. Furthermore, one's interactions with others, social norms, and vicarious experiences based on imitating the accomplishments of others can either

increase or decrease one's belief in one's own effectiveness (Rehg et al., 2012). Because intercultural communication is perceived as potentially difficult, a person with a higher level of self-efficacy is more likely to participate in and continue to participate in it (Ross et al., 2009). Consider the individual's potential overconfidence and sense of self-efficacy, which may cause them to overlook the importance of careful planning and ongoing introspection, both of which can contribute to their personal development.

The Relationship of Cognitive Flexibility and Openness to Self-efficacy

Environmental adaptation is required for cognitive flexibility. This has an impact on both learning new information and applying it to its original contexts and categories (Ross et al., 2009). Other skills that may be included in this construct include perspective taking, which involves empathy and assuming the perspective of the other; frame shifting, which involves understanding metaphors, paradoxes, and innuendos; and alternation of the code linguistic character, which is both a cognitive proclivity and a behavioral character and represents the ability to understand broader contexts (Ross et al., 2009). There may be prejudices, misunderstandings, disputes, and other issues. Thus, cognitive flexibility demonstrates a person's ability to comprehend a situation and apply it to future situations, which is necessary for cultural learning and social adjustment (Shaffer et al., 2006). When a person resists change and does not restructure their cognitive categories in response to environmental stimuli, this is referred to as cognitive rigidity (de Melo et al., 2021).

Self-efficacy is predicted by cognitive adaptation and openness (Demirtaş, 2020). Depending on the situation, it could result from a comprehensive mental model with numerous options (Ross et al., 2009). Complex and dynamic problems necessitate mental flexibility and openness (Gompert et al., 2005). Partnerships for virtual exchange promote intellectual and cultural exploration (Woo et al., 2014). This openness leads to cognitive flexibility, which is the ability, willingness, and capacity to adapt to various situations and recognize that there are multiple ways to handle events. Self-efficacy improves. People who are cognitively flexible are aware of their options, can adapt, and are more confident in their abilities. Academic, social, emotional, and general self-efficacy are all affected by cognitive flexibility (Demirtaş, 2020).

Problem-solving and decision-making are critical in multicultural interactions and necessitate openness and flexibility (Ross et al., 2009). When a person resists change and does not restructure their cognitive categories in response to environmental stimuli, this is referred to as cognitive rigidity. This capacity (or lack thereof) can be identified and addressed prior to the collaboration using a variety of methods, including a preparation phase (de Melo, 2021). Self-efficacy is increased by flexibility and adjustment of views and beliefs. Cognitive flexibility, which increases self-efficacy, is determined by a person's willingness and ability to adapt and consider alternative options (Demirtaş, 2020). Cognitively flexible people are willing to try new communication methods and adapt to new situations. Student adaptation is predicted by cognitive flexibility (Demirtaş, 2020). This suggests that cognitive flexibility in individuals can be developed and measured (de Melo, 2021), which aids in goal achievement and reduces the impact of negative experiences. Learners who (a) have a higher level of discernment for gaining new perspectives from another person, (b) are resourceful in approaching problems (conflict/misunderstandings) with someone, (c) are more open to using diverse options to solve a problem, (d) are

more creative in coming up with new plans and ideas, and (e) can be fair in a conflict situation can be more effective in such situations, according to research (Demirtaş, 2020).

The Relationship of Emotional Regulation to Self-efficacy

Emotional regulation is the process of initiating, avoiding, suppressing, maintaining, or changing emotions, as well as emotional behavior and attention. It refers to how a person regulates and reacts to emotions, how they are formed, when and how they are experienced, and their ability to control the intensity or length of their experience so that it does not interfere with performance (Southward et al., 2021). Individuals may hide or change their perspective to avoid negative emotions (Gross 2014; Aldao, 2013), despite the fact that most emotion regulation studies assume people use best practices (Vered et al, 2021). Poor self-regulation, as a result, reduces interpersonal skills and connection development in a variety of settings, affecting performance self-efficacy.

Emotional regulation is influenced by self-regulation (DeYoung et al., 2010). Our personalities and relationships are shaped by our emotions, and our emotions influence our thoughts, feelings, and actions. People who are adaptable see cross-cultural events as challenges rather than threats, which affects their emotions. Thus, improved emotional control aids in dealing with the unpredictability of events (Van Der Zee et al., 2004). The situation, intention, and cultural distance between intercultural partners all influence emotional control (Ross et al., 2009). Emotion regulation is required for social and cultural adaptation (Eisenberg & Spinrad 2004), and emotional management has an impact on social and academic performance (McRae & Gross, 2020).

Self-efficacy, or the belief that one can succeed, is required for adaptive coping (Midkiff et al, 2018). People will not adapt flexibly to new situations, avoid rigid responses under stress, and approach reality with curiosity and enthusiasm, according to Milioni et al. (2015), if they do not believe they can master the emotions associated with repeated experiences of multiple daily annoyances and life's greatest challenges. According to Caprara et al, (2013), emotional self-efficacy beliefs predict changes in stable personality traits such as emotional stability and positive orientation. This construct is also related to an individual's ability to reflect on their emotions and better understand their emotional responses. Despite being perceived as irrational, emotions arise from our logical interpretation of the situation and our assessment of whether it is in our favor or against us (de Melo et al., 2021). According to research, self-regulated learners are better at dealing with unexpected events and have higher self-efficacy.

The Role of National Culture

According to research, national attitudes toward individualism and collectivism differ. Individualism and collectivism are linked to values, self-concept, and cognitive processes in cross-cultural research, implying that culture influences both content and process. Individualism and collectivism have implications for international comparisons and research (Oyserman & Lee, 2008). Hofstede (1980), a pioneer in cross-cultural research, classified nations and cultures; his dimensions of individualism-collectivism and uncertainty avoidance may have an impact on GVT collaboration. Individualists have more freedom, whereas collectivists are communistic with

members of their own group but not with members of other groups. According to Hofstede (1980), culture influences community segregation and connectivity. Individualism places importance on self-awareness, independence, initiative, and privacy. Collectivist societies place a premium on "we," group unity, and obligation (Kim et al., 1994). Cultural groups and individuals differ greatly depending on the context.

One of the six dimensions of national culture is the tolerance of ambiguity (uncertainty avoidance). Individualism is associated with a proclivity to accept events and data that are unclear, insufficient, or ambiguous (de Melo, 2021; Hofstede, 2019). Intolerance for ambiguity, which is associated with collectivism, is characterized by a desire for predictability, a preference for order, and psychological distress in the presence of ambiguity (Webster & Kruglanski, 1994). Stress and avoidance of uncertain situations are caused by a low level of uncertainty tolerance, and uncertainty is disliked by authoritarianism and ethnocentrism (Abbe et al, 2007). Cross-cultural research revealed that self-efficacy is not universal and unidimensional, with individualist students self-regulating better than collectivists (Wang et al., 2013). Uncertainty-averse people dislike unstructured work and unexpected results. Innovations are rarely well-structured and disrupt the status quo. Avoidance of high uncertainty weakens the self-efficacy-innovativeness link (Kumar & Uz Kurt, 2011). According to research, cultural background influences how personality traits are expressed, demonstrated, and exercised (Kumar & Kelly, 2006).

Individualism promotes independent thought and behavior that questions the status quo (Wu, 2009), which may increase self-efficacy and innovativeness. Individualism is valued by collectivist cultures, while interdependence is valued by individualistic cultures. Self-efficacy increases as people gain confidence in their abilities, processes, and changes and work creatively to overcome uncertainty. Positive correlations were found between European-American ideals, cognitive flexibility, and self-efficacy (Kim & Omizo, 2005). Individualistic students, according to research, are more self-confident than collectivist students.

During the testing of the explanatory model for self-efficacy, COVID-19 infected the world. As a result, we controlled for the pandemic when testing the model. We wanted to ensure that the pandemic was not impacting the outcomes of the results. The conceptual model used to test self-efficacy with the independent variables of cognitive flexibility and openness, emotional regulation, and individualist or collectivist cultures is found in Figure 1.0.

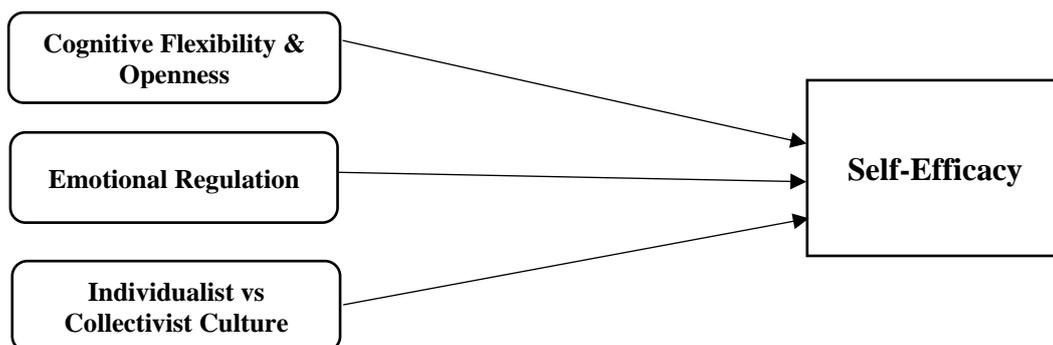


Figure 1. The Conceptual Model of Self-Efficacy

Research Design and Methods

To predict the influence on self-efficacy, a regression model was developed utilizing independent variables that represent cognitive flexibility and openness, emotional regulation. The survey instrument, data collection, and sample, as well as the virtual exchange experience with the GVT are detailed here.

Sample

As part of their academic program, students participated in a quantitative study that involved collaborating with partner classes from various countries in GVTs. These exchanges involved GVT and working with their assigned teams consisting of both their own university peers and those from partner universities. Across multiple course terms, students completed a survey questionnaire before (n=584) and after (n=399) their GVT experience. The sample composition based on countries reflected the profile described in Table 1. From Spring 2018 to Fall 2021, the sample included undergraduate students from seven institutions in six countries (Brazil, France, Japan, the Netherlands, Switzerland, and the United States) enrolled in international business courses. This included the time before and after the covid epidemic. The students' ages range from 18 to 35 years old, with the majority being between the ages of 18 and 21. The United States had the most students in the sample (n=462), accounting for less than half of the total. The students from Brazil had the second highest representation (n=318), accounting for slightly more than one-third of the total. The remaining sample was made up of people from France (n=65), Japan (n=57), Switzerland (n=35), and the Netherlands (n=33). The sample composition based on countries reflected the profile described in Table 1.

Table 1. Sample Description

Country	Pre	Post	Total
US	266	196	462
Brazil	211	107	318
France	32	33	65
Japan	30	27	57
Switzerland	23	12	35
The Netherlands	22	11	33
Totals	584	399	983

The Collaboration Context and Experience

Undergraduate business assignments were required through a series of intercultural GVTs that allowed students to work collaboratively on project-based work with peers from the other five countries. As part of this initiative, students were exposed to international business projects in order to strengthen their collaboration abilities and multicultural experiences. The major purpose of this study was to analyze students' self-efficacy and to see if COVID-19 and the virtual interactive structure impacted learners' self-efficacy beliefs. To evaluate the influence of GVT on student self-efficacy, a four-year longitudinal study of learners enrolled in the courses was utilized to

gather data from 2018 to 2021, including both non-pandemic and pandemic periods. To predict the learner's self-efficacy, a model was constructed and evaluated before and after the GVT.

Each course included six to ten weeks of interaction with students enrolled in GVTs. These GVTs were designed to simulate a company's worldwide environment through the use of cultural briefings, introductions, and self-managed teams, allowing students to experiment with and learn new skills and approaches. These simulations offered students practical experiences and collaborative projects that replicated real-world work settings. By involving students from diverse disciplines, these practices foster interdisciplinary collaboration and enhance problem-solving and teamwork abilities, and promote cultural understanding, the development of global perspectives, and the acquisition of skills essential for the contemporary job market (Admiraal et al., 2019). Additionally, the students bear the majority of the responsibility for the success of these meetings (O'Dowd, 2020).

As commonly performed in the COIL approach, all students took part in an "icebreaker" activity as part of the event, in which they shared information about their personal and professional interests, subject of study, and other issues of mutual interest. During this icebreaker activity, students used several audiovisual platforms, such as VoiceThread and Flipgrid, to start project discussions. These web-based technologies were chosen because they provide asynchronous video conferencing, which was required owing to the students' different time zones.

To construct tasks, a variety of multicultural GVT collaborations were used. Students engaged in collaborative project-based learning with peers from all around the world by working in small virtual groups. This environment exposed students to globally simulated projects, allowing them to hone their competitive abilities and gain multicultural awareness. Each virtual exchange contained a necessary assignment in the form of a multi-phased project final report in the form of a plan analyzing an international opportunity, such as the introduction of a product, solving a global issue, or the development of new strategies. One of the key aims, for example, was to generate a concept for a new commercially viable product for a company, conduct a risk and opportunity assessment, and design a new market entry plan, including a proposed entry strategy and tactics. The assignments required the "project client" which not always actively participating in the project's creation.

The collaborative materials and instructions for the course were laid out in GoogleDocs, so that all participants and team members had access to the same papers, guidelines, and due dates. Students chose topics for their projects in self-directed and self-organized teams. Students met virtually online and collaborated electronically across international boundaries to accomplish the GVTs deliverables, utilizing technologies and platforms agreed on together. Although the teams were self-organized, they had to adhere to the deadlines. GVTs decide on their own communication medium and frequency, team coordination and leadership, task assignment, and other aspects of cooperation. Because of the unpredictability of the global business environment, it was up to the teams to complete project work while reviewing, structuring, and responding to the environment, impediments they may have experienced, and unanticipated occurrences. To accomplish the project, students engaged in both asynchronous and synchronous discussions as they saw fit. Although they were free to choose their own communication tools. However, the majority of teams used WhatsApp, Google Docs, and Zoom. The GVT collaboration was an important component of the course, and participation was required; the project accounted

for 50% to 75% of the course grade.

Data Collection and Survey Design

The self-efficacy of students was assessed using a six-point Likert scale adapted from The Cross-Cultural Competence Inventory (CCCI) (Ross et al., 2009). The CCCI was created as part of a protracted and thorough effort by the U.S. Navy and Army to improve the cross-cultural competency of the military. Incidents in which stereotyping, racism, and power abuses alienated people from diverse cultures attracted attention to the need of developing these skills. The CCCI instrument was created with a rational-empirical process based on an exhaustive literature review and in-depth interviews.

After its translation into Polish and subsequently Portuguese, adaptation, and validation, it was adopted in Brazil as the major instrument for assessing college students' intercultural ability (de Melo et al., 2021). The following hypotheses were tested using the CCCI questionnaire. Each variable is linked to the hypotheses tested by the actual survey question used for measurement (see Appendix A). Several hypotheses on the effect of cognitive flexibility and openness are examined on their impact to self-efficacy. These variables include discernment, resourcefulness, diverse options, creative thinking, and fairness.

Discernment

Self-efficacy increases with discernment for new perspectives from others. Discernment is a learned ability to think, aspire, know, feel, choose, and act in accordance with what is right in the present and to influence future events for the benefit and common good of others (Joubert, 2019). Effective decision-making requires self-awareness, context understanding, and constant adjustment of views, perceptions, and actions. According to Trauffer et al. (2010), these people can use their wisdom to thoroughly investigate situations, have an ability based on information and/or experience, and make accurate judgments, especially about hidden topics. They carefully read "the signs of times" and act accordingly.

On a global scale, one must be more attentive and cognizant of numerous contexts, which are comprised of different cultures and behaviors, so one must adopt a more pragmatic perspective, comprehension, and evaluation method for assessing vital business values and behaviors. This includes assessing information, intuition, and other insights (Pauleen et al., 2010; Rooney & McKenna, 2008). The survey question (SQ) used to measure discernment was- *I know how to gain insight from another person to get a job done* (see Appendix A).

Resourcefulness

Learned resourcefulness, according to Erozkhan and Deniz (2012), is the capacity to think optimistically, solve issues, and be confident in the face of adversity that is obtained via experience, modeling, and lifetime training. It is a cognitive repertoire of behaviors and skills that aid in the self-regulation of internal reactions such as emotions and cognitions that interfere with a desired activity. Individuals acquire these behaviors and cognitive

skills throughout their lives in order to successfully cope with difficult life events and carry out self-control tasks while using ideas from various self-regulation models. It is different in that it is a cognitive-behavioral repertoire that is related to one's access to and application of change approaches rather than the techniques themselves.

Individuals that high on resourcefulness are better at (a) using cognitions to control their emotions and physiological responses; (b) adopting effective problem-solving strategies; (c) postponing gratification; and (d) trusting in their skills to self-regulate (Rosenbaum & Ben-Ari, 1985). Self-assured persons can control their emotions and ideas in order to act, are conscious of their abilities, and can see and consider alternatives (Demirtaş, 2020). Individuals who are self-assured can control their emotions and ideas in order to perform well. Academic self-control and stress management increase as well, and success is determined on interpersonal skills, and self-efficacy demonstrates social confidence (Erozkan & Deniz, 2012).

The expectation of self-efficacy is the notion that one can manage a circumstance (Bandura, 2006). People with low social self-efficacy may avoid risky situations. Conflict resolution resourcefulness boosts social self-efficacy, which is connected to psychological adjustment. Resourceful individuals employ a broader variety of coping mechanisms to deal with adversity. People who have low social self-efficacy may avoid particular encounters because they believe they are risky. Learned resourcefulness and social self-efficacy have been linked to psychological adjustment; hence, resourcefulness increases self-efficacy in resolving interpersonal conflicts. The survey question (SQ) used to measure resourcefulness is –If my approach to a problem isn't working with someone, I can easily change my tactics (see Appendix A).

Diverse Options

Cognitively flexible individuals are not only aware of options and prepared to adapt to the situation, but also have a higher degree of self-efficacy (Demirtaş, 2020) as a result of their greater confidence in their ability to succeed, which is a predictor of school adaptability. These findings indicate that cognitive flexibility increases the likelihood of achieving one's goals (Tamir, 2009) and lessens the impact of negative experiences (Hirt et al., 2008) by enabling individuals to generate ideas, evaluate various perspectives, and adapt to environmental changes.

Self-efficacy requires cognitive flexibility (Demirtaş, 2020). Self-efficacy increases as a person's willingness to employ a variety of approaches to solve a problem grows. Multicultural experience predicts creativity in students with high openness (but not those with low openness), which is related to inquisitiveness. Specifically, it is associated with schooling and a heightened sensitivity to cultural training, enhancing the unorthodoxy and cultural relevance of their problem-solving techniques (Cho & Morris, 2015). The prediction is that self-efficacy will increase with the number of available options. The survey question (SQ) used to measure openness to diverse options was –*I always see many possible solutions to problems I face* (see Appendix A).

Creative Thinking

According to Greenstein (2012) creative thought can innovate, apply new forms, generate a lot of imagination, or

change something into something new. Treffinger et al. (2002) identify five signs of innovative thinking: (1) fluency—the ability to generate ideas, ways, suggestions, questions, and alternative answers smoothly within a given time; (2) flexibility—the ability to generate various ideas, answers, or questions from different perspectives by changing ways of thinking and approaches; (3) originality—the ability to generate phrases, ways, or ideas to solve a problem or combine parts or elements unusually and uniquely that was unthinkable by others; and (4) elaboration—the ability to generate ideas, ways, suggestions, questions, and alternative answers

To enhance, students' diverse creative thinking abilities need a learning environment and a learning experience (Yusnaeni et al., 2017). Understanding how individuals learn may help improve academic achievement and foster creativity. Students should be given opportunity to find their potential and express themselves, therefore, the curriculum and staff dedication to progress in and out of the classroom affect how much of this occurs. Classroom, campus, extracurricular activities, and advisor-student contact all have an impact on the educational aim of encouraging creativity (Baker et al., 2001). There is a positive relationship between cognitive learning and thinking abilities, indicating that strengthening thinking skills is critical for addressing challenging situations (Siburian et al., 2019).

Cross-cultural encounters, according to Leung and Chiu (2010), diminish intolerance to foreign culture and increase creative synthesis. As a result, culture will be shed, and fresh thinking will be encouraged. The survey question (SQ) used to measure creativity was- *I enjoy coming up with new plans and new ideas* (see Appendix A).

Fairness

Collaboration is strongly reliant on fairness, which demands consideration for relative payoffs between oneself and others or between third parties. In challenging situations, most of us would take the posture of "trying to be fair," a bias that is impossible to correct if it is not recognized (McPherson Frantz, 2006). Individuals like to see their own vision of the world as the evident, unmediated reality; they are so invested in their own viewpoint that they are unconscious of the creation process. The emotional reactions of their gut are often rapid and unconscious and are a component of this cognitive process. As a result, it's possible that the bias blind spot explains the previously observed detrimental impact of encouraging fairness. As a consequence, we assume that our own interpretations are not skewed, and urging others to remain neutral as a method of countering bias may result in their highlighting what they had previously decided. From their perspective, they are acting honestly.

Humans believe our own impulses and mental processes are reasonable, fair, and objective because we believe our own viewpoints are true representations of reality (McPherson, 2006). It is also predicted that an individual's self-efficacy would rise in direct proportion to his or her neutrality in a conflict scenario. While all societies evaluate merit when deciding on justice, some cultures put a larger premium on interpersonal peace and pragmatism (Blake et al., 2015). The survey question (SQ) used to measure fairness was- *When considering most conflict situations, I can usually see how both sides could be right* (see Appendix A).

Measuring Self-Regulation

In traditional classrooms, social interaction with instructors and other learners is crucial for motivating students and driving their progress. However, the shift to online learning lacks this interaction, potentially leading to demotivation. Online learning requires students to take charge of their own learning, necessitating self-motivation, self-discipline, and proactive engagement. Unfortunately, many students struggle with self-regulation, a skill that doesn't come naturally to everyone. Research shows that when students have more autonomy, they often face self-regulation issues like low motivation and ineffective peer communication. Developing self-regulation skills becomes crucial for students' success in online learning, especially during crises. Factors like self-regulation, student isolation, and access to learning resources have a positive influence on the intention to effectively use virtual learning (Mokhtar et al., 2023).

Self-regulation and self-control are terms that are commonly used interchangeably to describe the process of adjusting one's reactions to conform to socially accepted ideas, feelings, and behaviors. Self-regulation is defined as "self-generated thoughts, emotions, and actions that are planned and cyclically adapted to personal objectives" (Zimmerman, 2000, p. 14). Self-regulated learners have "personal initiative, tenacity, and adaptive abilities in exploring" their learning, transforming cognitive aptitude into task-related academic skills (Zimmerman, 2001, p.1). Pre-planning, activation, monitoring, and reflection are the four stages of self-regulation learning (Pintrich, 2004; Zimmerman, 2005).

Cognitive flexibility improves self-control and receptivity to improvement (Demitras, 2020), and students must govern collaborative discourse approaches to enhance their capacity to communicate. Students' regulation behavior is dependent on team collaborative discourse. Individual knowledge and understanding may aid the team in selecting communication techniques that correspond to their communication habits and grow over time (Borge et al., 2018). Collaboration, a form of layered cognition, is used by individuals and communities to develop knowledge. When people collaborate to make sense of new information and share their expertise, they generate shared meaning. Individual mind is externalized to communities via language. Following that, the group must convert individual knowledge into common knowledge and negotiate what is understood in order to manage what is transmitted to the greater community (Stahl, 2006).

When a student accurately assesses a problem state versus a desired state, they may choose from a variety of strategies to plan future action and examine the processes they must control to proceed. Because the move from individual to group cognition exacerbates all regulatory activity concerns, many of the issues that influence individual cognition also impair group cognition. According to Borge et al., (2018), collaborative activities entail knowledge of one's own ideas and behaviors, as well as the ideas and behaviors of others, interactions, integrated awareness of diverse aims, and the end outcomes. As a result, self-efficacy is expected to rise in tandem with the ability to self-regulate in order to examine and grasp the situation. The survey question (SQ) used to measure emotional regulation was- *I control my emotions by changing the way I think about the situation I'm in* (see Appendix A).

Measuring National Culture

The inclusion of individualism and collectivism as variables in the study is crucial due to the observations that people from different cultures have distinct experiences. These cultural orientations, individualism, and collectivism, shed light on how individuals and societies interact in diverse ways. Extensive research conducted in English-speaking countries suggests that North Americans tend to exhibit higher levels of individualism compared to individuals from other civilizations (Oyserman et al., 2002; Oyserman & Lee, 2008). The differences between individualistic and collectivist cultures have been associated with various experiences, revealing that cognitive processes such as assimilation or inclusion are more prevalent in some cultures, while others may rely more on contrast or exclusion. Understanding these cultural differences is important as they can shape individuals' attitudes, behaviors, and self-perceptions.

In the context of the study, it is relevant to investigate the impact of individualism and collectivism on learners' self-efficacy. Oyserman and Lee (2008) argue that individualistic learners are likely to have higher levels of self-efficacy compared to collectivist students. By considering the cultural orientations of the participating countries, such as Brazil and Japan representing collectivist cultures, and France, the Netherlands, Switzerland, and the United States representing more individualistic cultures, the study can explore how these cultural factors influence students' self-efficacy beliefs. This information adds depth to the research findings and contributes to a better understanding of the relationship between cultural orientations and self-efficacy in an educational context.

Model for Predicting Self-Efficacy

The applied regression model for predicting self-efficacy is outlined:

Self-Efficacy (y) = Discernment (x1) + Resourcefulness (x2) + Diverse Options (x3) + Creative Thinking (x4) + Fairness (x5) + Self-Regulation (x6) + Individualist vs collectivist (x7)

Results

Comparing the results of the pre- and post-GVT experience of self-efficacy reveals no significant difference in model performance. Self-efficacy results remained the same both before and after the VE experience for the learners. However, there are differences between the pre- and post GVT learners regarding the impact on the predicted variables on self-efficacy. It is clear that students relied on different variables to maintain their self-efficacy before and after the GVT experience. In the pre-GVT experience, there is a significant and moderate relationship of the model ($F = 48.450$, $sig. = .000$, Adjusted $R^2 = .412$) except for the variable of fairness (std beta = .065; $sig. = .086$) which was insignificant in predicting self-efficacy. This means that the variable of fairness did not have any relationship to contributing to the learner's self-efficacy in the pre-GVT experience. In the post-GVT, there is a significant and moderate relationship of the model ($F = 35.263$, $sig. = .000$, Adjusted $R^2 = .430$) except for the variables of resourcefulness (std beta = .008; $sig. = .878$) and self-regulation (std beta = .033; $sig. = .490$) which were insignificant in predicting self-efficacy.

It appears that after the GVT experience, learners no longer relied on their resourcefulness or self-regulation for their self-efficacy. Based on the results, the VE experience with the GVT's had an impact on what aspects were relied upon for the learner. Thus, the GVT experience impacted the variables of resourcefulness and self-regulation leading to self-efficacy after the GVT experience but not before. In addition, before the GVT experience, the sense of fairness was not a factor leading to self-efficacy for the learner because it was only significant after the GVT experience. The GVT instilled the importance of fairness after the project experience. When comparing learners from individualist versus collectivist countries, in both the pre- and post-GVT there was a significant relationship with self-efficacy. In the pre-GVT sample, learners from individualist countries had higher self-efficacy than those from collectivist countries (std beta=-.107, sig=.001). This remained the same in the post-GVT sample (std beta=-.097, sig=.019). The result is that learners from individualist countries experience a higher level of efficacy than collectivist countries regardless of the GVT experience.

Finally, in our study, we discovered distinct patterns illustrating how the pandemic influenced the self-efficacy of our learners. When accounting for the impact of the pandemic, we observed some variations between the pre-GVT and post-GVT samples. It became evident that the pandemic had a specific effect on the self-efficacy of the learners, manifesting in unique ways. In the pre-GVT set of learners, when controlling for the impacts of COVID-19, there is no statistically significant impact from COVID-19 (std Beta= -.018, sig=.604). This means the pandemic had no impact on the self-efficacy of the learner at least before the GVT experience. This is not the same after the learner participates in global learning. In the post-GVT sample of learners and before the pandemic began, there is an impact to the learner's self-efficacy (std Beta= -.097, sig=.019). Thus, when controlling for COVID impact, there is statistically significant impact for the learner's increased self-efficacy after the GVT experience before the pandemic, as seen in Table 2.

Table 2. Results for Predicting Self-Efficacy

Variables (x)	Before GVT Experience		After GVT Experience	
	Std Beta	Sig	Std Beta	Sig
Constant	.498	.051	1.136	.000
	Std Beta	Sig	Std Beta	Sig
Discernment (x1)	.212	.000	.153	.004
Resourcefulness (x2)	.151	.000	.008	.878
Diverse Options (x3)	.143	.001	.288	.000
Creativity (x4)	.138	.001	.123	.022
Fairness (x5)	.065	.086	.172	.001
Self-Regulation (x7)	.188	.000	.033	.490
Individualistic vs Collectivist (x7)	-.107	.001	-.123	.003
	F=48.450, sig=.000		F=48.450, sig=.000	
	Adj R2=.430		Adj R2=.412	
	n=364		n=543	
COVID	-.0518	.604	-.097	.019

It is not surprising that the learner's self-efficacy was diminished by pandemic after post-GVT experience. With the pandemic, the learner reported a decrease in self-efficacy after participating in global learning. The experience of GVT continued to increase the learner's sense of self-efficacy post-GVT but only before the pandemic.

Discussion

The study examined Global Virtual Teams (GVTs) over a span of four years, encompassing both pre-pandemic and pandemic periods. A conceptual model was formulated to explain the dynamics of learner self-efficacy throughout this duration. This research holds significance in both theoretical and practical realms, offering valuable insights and implications.

Theoretical Contributions

The study makes significant theoretical advances. It reveals that GVT experience is a helpful and effective teaching technique that helps individuals develop discernment, employ diverse viewpoints in decision-making, and acquire a sense of fairness rather than presuming one side is incorrect. Transparency, flexibility, emotion management, and critical thinking/creativity/independence (Matsumoto, et al., 2001), and students gained experience in how to handle unexpected problems, as well as use these practices throughout the epidemic. Many conventions, methods, and procedures of the US may not be appreciated, supported, or successful in other cultures, and vice versa. According to Hofstede's dimensions, hierarchical cultures value rules and procedures above invention and resourcefulness (Hofstede, 1980). As a result, it is essential to identify, observe, and comprehend that there are numerous approaches to dealing with unexpected situations. Students used their virtual resources and abilities to deal with the outbreak and enhance their self-efficacy.

Students also learned that, although innovation and resourcefulness are valued and encouraged in certain cultures, they may not be practicable in some international contexts. What is effective in one culture may be a hindrance in another. To work successfully across cultures, one must understand which talents to use and when, as well as which ones must be adjusted. While seeing others fail demotivates, seeing others succeed encourages (Klassen, 2004). Different cultures foster different ways of expressing emotion, resulting in various techniques of emotional regulation. According to Jarymowicz and Imbir (2015), emotion regulation seems to be a mechanism that increases people's capacity to cope with environmental demands such that emotions are truly useful and beneficial rather than distressing and damaging. Because culture promotes emotional control motivation, persons who are more adaptable and open may enhance their capacity to manage their emotions (Kobylinsa & Kusev, 2019).

Practical Implications

This study has a number of practical implications. This research on self-efficacy yielded some significant findings that will aid understanding of how different learners can prepare for the global business workforce. Despite the global challenges brought by the COVID-19 pandemic, learners have shown remarkable resilience and autonomy

in their educational journeys. The pandemic has disrupted traditional education, pushing learners to adapt to remote learning, online platforms, and virtual communication. In this process, learners have taken greater responsibility for their learning, actively seeking resources and utilizing digital tools to achieve their goals. Additionally, they have demonstrated resourcefulness in connecting with peers and collaborating despite physical distance. This newfound autonomy has not only enriched their learning experiences but also cultivated skills like adaptability, self-direction, and digital literacy. The pandemic, while a hurdle, has served as a catalyst for learners to take ownership of their education and explore new avenues of learning. It has showcased their resilience and adaptability, fostering a greater sense of initiative and autonomy in their educational journeys (Paudel, 2021).

For starters, having a GVT experience affects the student's self-efficacy. Students' experiences with success or failure in a specific situation influenced their sense of self-efficacy and the amount of effort they put into problem solving. People's self-efficacy increases when they have a positive perspective on their past successes (Yada et al., 2019), which is an important skill for workplace management and leadership. Students changed what influenced their self-efficacy before and after the GVT, with fairness, self-regulation, and resourcefulness being the most influential variables. Specifically, concepts of fairness had no effect on a student's self-efficacy prior to the GVT experience, but they did afterward. And, prior to the GVT experience, self-regulation and resourcefulness had an impact on self-efficacy, but not after. This implies that the GVT experience changed what the student relied on for self-efficacy prior to and after the GVT experience.

Exposure to different cultures increased cognitive flexibility and openness (Cho & Morris, 2015). Kobylinsa and Kusev argue that people who are more adaptable and open may have a better ability to regulate their emotions (2019). To effectively handle and adapt to changes in a rapidly changing world, managers and employees must understand the importance of being adaptable in their decision-making from a wide range of options. According to Davies et al. (2015), cultural adaptability entails the ability to tolerate and compromise, as well as being receptive to different cultures and aware of their differences.

The experience of self-efficacy was influenced by whether the country was collectivist or individualist. Learners in individualist countries were more likely to feel self-efficacy than learners in collectivist countries. Both global employers and higher education instructors must be aware of this and develop the appropriate tools, training, and contexts. The pandemic did play a very narrow but significant role understanding self-efficacy. In controlling for the pandemic, after the GVT experience, the lack of the pandemic had an impact in predicting student higher self-efficacy (std Beta=-.097, sig.=.019). Thus, the GVT had a greater impact when covid was not distracting student learning. Self-efficacy is more enhanced when the pandemic is not impacting the learner's self-efficacy. Before the GVT takes place, there is no statistically significant impact from COVID to the learner (std Beta=-.018, sig.=.604). The good news is that GVT does enhance self-efficacy of the learner, but when a global pandemic on health is taking place, GVT does not provide the same impact to the learner's self-efficacy.

Limitations and Future Directions

Although the study added to our understanding of how the GVT experience and the pandemic affected student

self-efficacy, its limitations must be addressed. Because the data collecting period occurred during university classes, our results may only represent a snapshot of perspectives at that point in time. As a consequence, the limitation of just getting a snapshot of the experiences may lose out on the intricacies of the persons who were surveyed, and their experiences as well as the possible significance of their replies.

The research focused on country culture rather than individual factors such as student personality, which might influence self-efficacy. Taking into consideration students' personality and may be useful in future study. A future panel research strategy to tracking changes in individual students might provide further insights about the GVT experience's long-term influence. Furthermore, assessing the growth of instructors as a consequence of these experiences, as well as controlling for teachers who have experience in partnerships against those who do not, and the influence on students' experiences.

Conclusion

The results of our study have important implications for higher education as well as organizations as it suggests that after the VE experience yet before the pandemic appears to have increased the learner's sense of self-efficacy but not in the pre VE sample of learners. Moreover, virtual exchange programs can enhance self-efficacy among learners and employees in the context of global virtual teams. Virtual exchange programs can provide opportunities for learners and employees to develop cultural intelligence, interpersonal skills, and technological competencies. By participating in virtual exchange activities, individuals can gain exposure to diverse perspectives, learn from others' experiences, and build their confidence in working with people from different backgrounds. Self-efficacy is a crucial factor for learners and employees in global virtual teams as it influences their ability to manage and adapt to the complexities of virtual work environments. Thus, GVT show benefits to the individual participant which can be utilized in learning both in the workplace and academe.

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Appendix A. Connecting Measures and Predictions

Cognitive Flexibility & Openness

Discernment

SQ. I know how to gain insight from another person to get a job done.

H1. To deal with unexpected events, students with higher discernment for gaining new perspectives from another person will report/exhibit/present a higher level of self-efficacy.

Resourcefulness

SQ. If my approach to a problem isn't working with someone, I can easily change my tactics.

H2. To deal with unexpected events, students with Resourceful in approaching problems (conflict/misunderstandings) with someone will report/exhibit/present a higher level of self-efficacy.

Diverse Options

SQ. I always see many possible solutions to problems I face.

H3. To deal with unexpected events, students with More openness to using diverse options to solve a problem, will report/exhibit/present a higher level of self-efficacy.

Creative Thinking

SQ. I enjoy coming up with new plans and new ideas.

H4. To deal with unexpected events, students with a higher level of creative thinking and coming up with new plans and ideas will report/exhibit/present a higher level of self-efficacy.

Fairness

SQ. When considering most conflict situations, I can usually see how both sides could be right

H5. To deal with unexpected events, students with Ability to be fair in a conflict situation will report/exhibit/present a higher level of self-efficacy.

Emotional Regulation

Self-Regulate

SQ. I control my emotions by changing the way I think about the situation I'm in.

H6. To deal with unexpected events, students with a higher capacity to self-regulate in order to think of and understand the situation will report/exhibit/present a higher level of self-efficacy.

SQ=Survey Question; H=Hypothesis