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# Comparing the transformative experiences of engineering students in short-term study abroad in France and Ghana

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## Abstract

Short-term study abroad programs (STSAs) have become increasingly popular in the United States. They are designed to promote global-mindedness, intercultural awareness, and transformative learning among participants. At the same time, they aim to reduce financial, academic, and personal barriers to make participation more accessible, particularly for students from minoritized backgrounds. However, there exists gap in the literature regarding the impact of study abroad destinations on shaping the degree of transformative learning experiences that students have during short-term study abroad programs. This paper explores the transformative journey from study abroad, in two culturally different destinations – France and Ghana, using mixed methods research. Data was collected through a post-program survey from 15 students of the Ghana cohort and 17 students of the France cohort. Both the study abroad programs lasted 10 days and were comprised of similar programmatic components. The results obtained indicated that students who went to Ghana were more likely to experience profound transformation and changes in their habits of mind as compared to those who went to France. Evidence in the article suggests that study abroad destinations having higher cultural distances from the host institution might offer greater opportunities for impactful experiences in a shorter amount of time.

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## Abstract in French

Les programmes d'études à l'étranger de courte durée (Short-Term Study Abroad, STSA) connaissent une popularité croissante aux États-Unis. Ils visent à favoriser l'ouverture internationale, la sensibilité interculturelle et l'apprentissage chez les participants. Parallèlement, ils visent à réduire les barrières financières, académiques et personnelles, rendant ces expériences plus accessibles, notamment pour les étudiants issus de groupes sous-représentés. Cependant, la littérature présente un manque de travaux portant sur l'influence du lieu de destination sur le degré d'apprentissage vécu par les étudiants dans ces programmes. Cet article utilise la théorie de Mezirow pour examiner les trajectoires de transformation d'étudiants en ingénierie participant à des programmes d'études à l'étranger dans deux contextes culturels distincts : la France et le Ghana, en s'appuyant sur une approche méthodologique mixte. Les données ont été recueillies à l'aide d'un questionnaire administré après le programme auprès de 15 étudiants du groupe Ghana et de 17 étudiants du groupe France. Les deux programmes, d'une durée de huit jours, reposaient sur des composantes pédagogiques similaires. Les résultats indiquent que les étudiants ayant participé au programme au Ghana sont plus susceptibles de vivre des transformations profondes, notamment des changements dans leurs habitudes de pensée, comparativement à ceux ayant participé au programme en France. Les résultats suggèrent que les destinations présentant une plus grande distance culturelle par rapport à l'institution d'origine offrent davantage d'opportunités de transformation significative, même sur une courte durée.

## Keywords

Impact of geographical distance; short-term study abroad; transformative Learning

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## 1. Introduction

### 1.1. Overview

Study abroad programs generally take place outside the geographical boundaries of the students' country of origin (Iskhakova & Bradly, 2022). Literature has intensively explored the significant impacts of study abroad programs on students' cognitive, affective, and behavioral learning outcomes (Kraiger et al., 1993; Varela, 2017). These programs offer holistic experiential learning aiding the personal (e.g., Barbutto et al., 2015; Harrison & Voelker, 2008; Petersdotter et al., 2017) and professional growth of students (Chiang & Yao, 2020; Moorhead et al., 2014; Vandever & Menefee, 2006). Study abroad programs have many variations based on various programmatic features such

as length, design, destination, the role of faculty, type of accommodation provided in the host country, nature of pre-departure preparation, the extent of cultural immersion, and academic objectives (Iskhakova & Bradly, 2022). Recently, Strange and Gibson (2017) investigated the impact of experiential learning nature of short-term study abroad programs on the transformative experience for college students. They highlight the transformative potential of these programs when properly structured. Jones et al. (2023) considered the impacts of the nature of the short-term study abroad programs on teachers' transformative learning and reflection skills. They found that, beyond cultural impact, transformative short-term study abroad can be structured to impact learners technical and professional skills. This article aligns with the existing literature and aims to compare the transformative potential of two culturally different destinations for short-term study abroad programs. We complement the existing literature by highlighting the potential impact the study abroad destinations have on the following outcomes: students' transformative experience, their journey of transformation, and the impact on their habits of mind.

## 1.2. Short-term study abroad programs

According to the Institute of International Education, short-term study abroad programs (STSA) usually have program lengths of less than eight weeks. In recent years, STSAs have become a prevalent form of student mobility in the United States (Goldstein, 2022). While STSA comes under the umbrella term of study abroad, Engle and Engle (2003) argued that the STSA programs should be considered a distinct form of learning because of their unique features. Like other study abroad programs, STSA programs aim to increase students' global-mindedness and intercultural awareness. However, unlike more traditional semester-long study abroad programs, STSA programs have succeeded by leveraging their ability to lower the financial, academic, and personal barriers for many student demographics who otherwise found it difficult to participate in traditional study abroad programs (Donnelly-Smith, 2009; Omachinski, 2013).

Regardless of the popularity of STSA programs, their comparison with traditional study abroad programs have seen mixed results. In their meta-analysis of learning outcomes of study abroad programs, Varela (2017) found that short-term study abroad programs could be equally impactful in terms of attitudinal and behavioral outcomes.

Studies have been conducted to determine the role of different programmatic features on participants' learning outcomes (Chiang & Yao 2020;

Strange & Gibson, 2017). Among these features, the impact of study-abroad destinations on student learning outcomes appear to play an important role (Gibson et al., 2023; Iqbal, 2019). We discuss this in more depth in the section below.

### 1.3. Impact of program destination

Kwuimy and Yoon (2023) found that destination is a major factor in students' motivation for virtual and in-person study abroad experiences. Research on STSA has mostly focused on American students participating in study abroad programs in Western Europe and the Caribbean region (Iqbal, 2019; Iskhakova & Bradly, 2022). Douglas and Ridders (2001) found that American students participating in a study abroad program in Costa Rica experienced a more profound cross-cultural interaction and a higher level of world-mindedness than their peers who studied abroad in England. This result highlights the crucial role of destination selection for study abroad in fostering greater cultural awareness among students. Similarly, Mody et al. (2017) have found that students traveling to countries with cultures similar to their host countries experience an increase in risk-taking behaviors and venturesome and lower levels of social difficulties, indicating less opportunities to come outside of their comfort zones. In contrast, Iskhakova and Bradly (2022) found that students' overall cultural intelligence may increase when they travel to countries with a higher cultural distance. In a recent study, Davis and Knight (2025) explored STSA for engineering students and found that students who traveled to countries with lower cultural distance felt less discomfort and those who traveled to higher cultural distance experienced more disequilibrating situations. The study did not explore the impact of cultural distance on transformative experience. Overall, there is a dearth of understanding on the comparative analysis of the transformative impact of study abroad experience in culturally different destinations.

### 1.4. Transformative learning in study abroad

Mezirow's transformative learning theory posits that when a learning experience, such as participating in a study abroad program, is transformative, students go through a deep and lasting change in their frames of reference (Mezirow, 2000), which positively impact their academic outcomes (Tien et al., 2019). These frames of reference are shaped by students' life experiences, prior schooling, personal interest, and the influences of socializers; they can be altered through transformative learning (Mezirow, 1997, p. 5).

Conversely, when the experience is not transformative, it barely alters the margins of students' frame of reference: the learning experience does not fit logically into or run counter to students' firmly held frame of reference. Students tend to label these experiences as "unworthy of consideration - an aberration, nonsense, irrelevant, or mistaken" (Mezirow, 1997, p. 5). Students' academic outcomes are thus negatively impacted (Tien et al., 2019).

Literature indicates that the experiential components of study abroad (e.g., field trips, site visits, community interaction, and peer interaction) help in challenging students' ethnocentric beliefs, habits of mind, and pre-existing frames of reference (Bell et al., 2016; Chiang & Yao, 2020). Study abroad components such as reflective learning activities, which include journal entries, self-reflection assignments, etc., are used to trigger the stages of the Mezirow's transformative learning, as described subsequently (Bell et al., 2016; Chiang & Yao, 2020; Strange & Gibson, 2017; Wood & Jobe, 2020). Due to the inherent challenges in assessing such a complex process, limited studies have explored transformative learning in short-term study abroad programs (Wood & Jobe, 2020).

Strange and Gibson (2017) explored how the study abroad program structure (program length and type of experiential learning components) impacted the degree of transformative learning experienced by the participants. Similarly, Jones et al. (2023) explored the transformative learning of pre-service teachers that occurred during a short-term study abroad trip to Ethiopia. They found that students faced disorienting dilemmas, emotional disequilibrium, and exploration of new roles and situations that all led to transformative learning. In a prior collaboration, the first and third authors (Shandliya et al., 2024) investigated the impact of students' personality attributes on their transformative learning experiences during their study abroad programs. They found that personality traits such as openness, agreeableness, and social skills influenced the transformative experiences of students participating in short term study abroad programs. Alternatives to study abroad programs such as virtual collaborative programs utilizing international teams have also been found to impact transformative outcomes for students by influencing changes in their habits of mind dimensions as reported in a recent contribution by the first and third authors (Shandliya et al., 2023).

This study expands the work of Strange and Gibson (2017), Jones et al. (2023), Shandliya et al. (2023), and Shandliya et al. (2024) to dive into the potential role of location of study abroad programs in shaping the degree of

transformative learning experiences. This article explores the transformative journey from study abroad, in two culturally different destinations based on Hofstede's cultural distance (Hofstede, 1983).

## 2. Rationale

The rationale of this study is twofold. This study attempts to add to the limited literature on short-term study abroad programs for engineering students in the context of a) the impact of program destinations and b) the extent and nature of transformative learning. The study adopts a mixed methods approach to gain a more comprehensive understanding of the transformative learning experiences of students. The study was guided by one overarching research question: What is the nature and extent of transformative learning experiences of American students participating in short-term study abroad programs to France and Ghana? We addressed this research question using three sub-questions, one for each phase of the mixed-methods study:

- **Quantitative RQ1:** What is the extent of transformative learning among students who studied abroad in France and in Ghana?
- **Qualitative RQ2:** How do students describe the nature of their transformative learning experiences in the context of their study abroad in France compared to Ghana?
- **Mixed RQ3:** In what ways does combining the quantitative data from the transformative learning instrument with the qualitative reflections of students' experiences enhance our understanding of the differences in transformative learning experiences between students who studied abroad in France and those in Ghana?

## 3. Theoretical background

The study utilizes Mezirow's transformative learning theory as its guiding theoretical framework. Mezirow's transformative learning theory is a widely used learning theory in context of study abroad literature focusing on transformative outcomes (Iskhakova & Bradly, 2022). According to Mezirow, transformative learning involves a fundamental reconfiguration of one's worldview. It signifies a shift from a familiar and perhaps unquestioned perspective to a more nuanced and reflective stance, often characterized by greater openness to diverse ideas, values, and ways of life. This transformation involves a critical examination of one's beliefs, assumptions, and biases and is

driven by the encounter with “disorienting dilemmas” (Mezirow, 1990), which serve as catalysts for profound reflection. Mezirow defined “disorienting dilemmas” as those moments of cognitive dissonance when our existing beliefs and assumptions are challenged. Through reflection, individuals can reconstruct their understanding of the world, leading to profound personal and intellectual growth.

The process of transformative learning is captured in Mezirow’s ten stages of transformation (Mezirow, 1978): 1. Disorienting Dilemma, 2. Self-Examination, 3. Critical Assessment, 4. Recognition of shared experiences, 5. Exploring options for new behavior, 6. Planning a course of action, 7. Acquiring knowledge, 8. Trying new roles, 9. Building confidence, 10. Integration of new perspectives. King (2009) summarized the above stages of Mezirow’s transformative learning theory and conceptualized ‘Journey of Transformation (JOT)’ comprising of four major phases (a) JOT1: Discontent (stages 1 & 2) – experiencing the disorienting dilemma, (b) JOT2: Testing and Exploring (Stages 3-5) - critically reflecting on our assumptions and values (c) JOT3: Affirming and Connecting (Stages 6-9) – experimenting with new viewpoints, and (d) JOT4: New Perspectives (Stage 10) – integrating and acting upon the new perspective gained through this process.

According to Mezirow’s theory, learners possess various “habits of mind” (Mezirow, 2000) which encompass assumptions, expectations, and beliefs that serve as a lens through which they interpret their experiences. These habits of mind are shaped by an individual’s culture, societal context, psychological makeup, and personal experiences. Cranton (2016) identifies six distinct dimensions that characterize these habits of mind: philosophical, moral and ethics, psychological, sociological, epistemic, aesthetic. The philosophical dimension encompasses our personal philosophies, religious beliefs, and transcendental worldviews. The moral and ethics dimension includes our conscience and adherence to moral norms. The sociological dimension involves social norms, cultural interpretations, and language use, shaping our understanding of appropriate behavior within a community. The epistemic dimension relates to how we acquire and use knowledge, and our learning approaches. The psychological dimension incorporates aspects, such as personality traits, individual needs, perceptions, and self-reflection. Lastly, the aesthetic dimension encompasses our values, attitudes, personal tastes, and standards of beauty. This research will add to the literature on STSA by exploring change in students’ habits of mind through the Mezirow’s transformative learning framework.

## 4. Methods

Researcher positionality helps in understanding how personal experiences and background knowledge influence a scholar's views and interpretations throughout their work. The first author, at the time of conducting this work, was an international South Asian doctoral student in the United States, whose interpretive lens is influenced by her own TL experiences in the context of higher education, owing to the cultural and pedagogical differences in her home country and the US. Such experiences have helped her in identifying and empathizing with the study's participants' transformative experiences. The second author is an early-career research scholar in engineering education and also identifies as an international scholar of South-Asian origin. She uses a pragmatic paradigm in her research which often involves mixed methodologies. Her pedagogy and research are influenced by acknowledging the differences individuals bring to the table and how same experiences can impact individuals differently. The third author is an African-born male engineering educator with lived experiences of being both a student and a faculty member in diverse international contexts. His research and pedagogical practices are informed by the challenges faced by international and underrepresented learners in STEM. Drawing from his extensive experience leading multiple study abroad programs, his research work recognizes the inherent potential and structural limitations of study abroad as a TL tool.

This section elaborates on the design of our study, methodology used, sample and program characteristics, and data collection procedures. Data analysis is described in section 5.

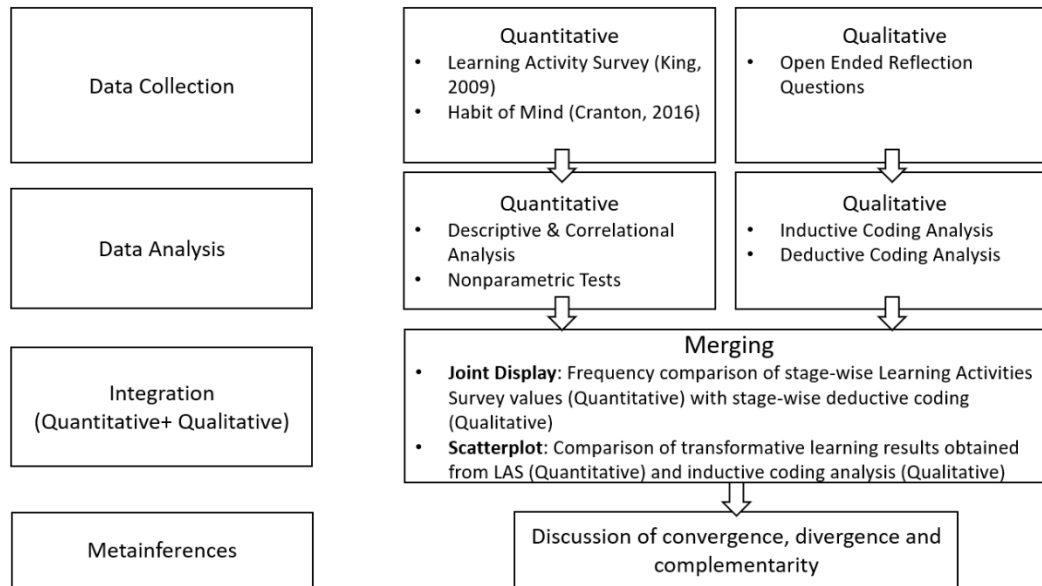
### 4.1. Research design

This research used a convergent mixed methods design, which is defined as “the implementation of independent quantitative and qualitative study components, the results of which are then integrated through merging analyses and interpretation to develop more holistic and comprehensive conclusions” (Plano Clark, 2019, p. 108). The design and analysis of the quantitative and qualitative elements of the survey is presented in Figure (1). The quantitative elements of the survey were focused on measuring the extent of transformative learning, while the qualitative elements were geared towards uncovering the nature of transformative learning. To further investigate the overall transformative learning process, we utilized merging of both quantitative and qualitative data to understand the convergence and divergence of the results

and their interpretations in order to obtain a more complete picture of the students' transformative experiences.

**FIGURE (1)**

CONVERGENT MIXED METHOD RESEARCH DESIGN



## 4.2. Participants and settings

### 4.2.1. Participants

Participants were enrolled in a 3-credit hour course at the college of engineering of the University of Cincinnati which is a Research-I institution in midwestern United States. For the Spring 2023, there were two destinations for which students self-select: France and Ghana. All students pre-selected their destination during the Fall 2022 and enrolled in a Spring 2023 course that supports the study abroad experience at the institution's strategic international partners – Université de Lorraine, France and University of Cape Coast, Ghana (referred to as host universities in this article). The course aimed to develop competencies that enable students to contribute to the global workforce by providing an opportunity to visit and interact with technical professionals in an international setting. The course contents are structured to meet the following learning outcomes: (i) Describe the implications of personality type preferences on their workplace effectiveness; (ii) List the steps needed to develop effective teams and the attributes needed to be an effective team member, including a global team; (iii) Describe and apply Hofstede's dimensions of values to particular cultures; (iv) Describe and demonstrate the skills needed to function

on a virtual team; (v) Describe the complexities of global work teams. During the first part of the course, students engaged with content related to the learning outcomes in a classroom setting. In the second part, during spring break, students traveled to their chosen study-abroad destinations. Finally, in the third part of the course, students completed reflection assignments based on their trip experiences.

During their visit, students interacted with the host university students and local technology firms and explored local culture. Student participants for this study completed short-term study abroad programs in France (Cohort 1,  $N = 15$ ) and Ghana (Cohort 2,  $N = 17$ ). They all left and returned on the same day. Both the study abroad programs lasted 8 days and were comprised of similar elements in accordance with Anderson and Lawton (2015) classification: world enlightenment, career development, personal growth, and entertainment. The itinerary is given in Table (2) for Ghana and Table (3) for France. The survey was administered to both cohorts after they returned from their trip, through the canvas course website through the course instructor.

#### 4.2.2. Hofstede's cultural distance and program itinerary

As part of the course, students explore various cultural activities and discuss the cultural difference between their destination and the USA. Cultural distance based on Hofstede's (1983) model of national culture was discussed in class and summarized in the table below.

**TABLE (1)**  
SUMMARY OF CULTURAL DISTANCE

Dimension	USA	France	Ghana
Power Distance	Low	Moderate	High
Individualism vs. Collectivism	Highly Individualistic	Individualistic	Collectivist
Masculinity vs. Femininity	Masculine	Masculine	Masculine
Uncertainty Avoidance	Low to Moderate	High	Low
Long-Term vs. Short-Term Orientation	Short-term	Short-term	Short-term
Indulgence vs. Restraint	Indulgent	Indulgent	Restrained

Table (1) leads to the following interpretation: Ghana, compared to the U.S. and France, shows the most significant difference in its acceptance of hierarchy; While the U.S. and France are highly individualistic, Ghana is more

collectivist, placing emphasis on family and community. In terms of masculinity, all three countries are relatively masculine, but Ghana focuses more on traditional roles and respect; When it comes to uncertainty avoidance, the U.S. is the most flexible, France prefers structure, and Ghana is more adaptable; Lastly, while both the U.S. and France are indulgent, Ghana tends to lean towards restraint, prioritizing social norms and control over personal gratification. These differences would shape business practices, communication styles, and social expectations across these three countries. The program in both countries involve activities to capture business/engineering practices, social expectations, and communication styles. The itinerary for each trip is in the two following tables.

**TABLE (2)**  
STUDY ABROAD ACTIVITY IN GHANA

Day	Nature of Activity	Activity
1	Arrival in Accra	
2	Career development	Accra: Industrial Visit
	World enlightenment	Accra: Tour of Accra
3	World enlightenment	Cape Coast: Cape Coast Castle
	Entertainment	Cape Coast: Live Music Band by the Beach
4	Personal growth	Cape Coast: Mass (Optional)
	World enlightenment	Cape Coast: Kankum National Park
	Entertainment	Cape Coast: Cultural Dance Class
5	Personal growth	Cape Coast: University of Cape Coast - Students interaction
	Career development	Cape Coast: Industrial Visit
	World enlightenment	Nzulenzu: Stilt Village and Beach Relaxation
6	Personal growth	Kumasi: Kwame Nkrumah U. of Sce Tech. - Students interaction
	World enlightenment	Kumasi: Manhyia Palace, and Art Center
	World enlightenment	Kumasi: Bonwire Kente
7	World enlightenment	Accra: Tour of Accra
	Career development	Accra: Industrial Visit
	World enlightenment	Accra: Art Center: Drumming Class and Shopping souvenirs
8	Departure from Accra	

**TABLE (3)**  
STUDY ABROAD ACTIVITY IN FRANCE

Day	Nature of Activity	Activity
1	Arrival in Paris (Charles De Gaule)	
2	World enlightenment	Nancy: Walk to Sacre Coeur – Train Travel
3	Career development	Nancy: University of Loraine
	Entertainment	Nancy: Walking Culture Tour
4	World enlightenment	Bordeaux: Train Travel
	Personal growth	Bordeaux: St. Emillion (Open)
5	Career development	Bordeaux: University of Bordeaux (IMS)
	Personal growth	Bordeaux: Evening (Open)
6	World enlightenment	Paris: Train -Paris
	World enlightenment	Paris: Eiffel tower
	Personal growth	Paris: Museum (open)
7	World enlightenment	Paris: Group Dinner
	Personal growth	Paris: Open
7	Personal growth	Paris: St. Chappell (or open, optional)
	Personal growth	Paris: St. Chappell (or open, optional)
8	Departure from Paris	

The itinerary is structured to achieve four specific outcomes common in short-term study abroad programs as defined in Kwuimy and Yoon (2023), and Anderson and Lawton (2015). For both itinerary, students are led by two faculty. In order to facilitate students' experience, daily orientation sessions were scheduled in the morning (either during breakfast, or during transit), and daily reflections were scheduled in the evening (either during dinner or during transit). Upon return to campus, there was a class debrief session the following week.

### 4.3. Instrumentation and data collection

Data was collected through a Qualtrics survey administered via email, and posted on the course learning management system. Email reminders were sent to students to complete the survey. Students completed their survey prior to attending the debrief section upon returning to campus. The survey was

divided into three sections. The first section included the Learning Activities Survey (LAS), a widely used instrument to assess transformative learning. The second section gathered data on changes in habits of mind, which is an associated outcome of transformative learning. The final section collected students' reflections on potential transformative experiences through open-ended questions. Demographic data were not collected through the survey, but were instead retrieved from available institutional records. To ensure confidentiality, the third author downloaded the data and shared with the first and second authors after removing all identifiable information. Data are being kept securely on institutional cloud storage.

#### 4.3.1. Quantitative data collection

**Learning Activities Survey (LAS):** This instrument was developed and validated by King (2009) and is designed to measure students' experiences in different stages of Mezirow's transformative learning. The original instrument has a checklist format, and we modified the response option to Likert scale to collect a broader spectrum of stage wise transformative experiences. The items in this modified LAS (see Table 4) collected responses on a 6-point Likert scale, ranging from strongly disagree to strongly agree.

**TABLE (4)**  
LAS ITEMS AND CORRESPONDING TL STAGES

Stage#	Journey of Transformation (JOT)	Mezirow's Stages	Learning Activities Survey Items (Checklist Format)
Stage 1	JOT1: Discontent	Disorienting Dilemma	I had an experience that caused me to question the way I normally act. I had an experience that caused me to question my ideas about social roles.
Stage 2	JOT1: Discontent	Self- Examination	As I questioned my ideas, I realized I no longer agreed with my previous beliefs or role expectations
Stage 3	JOT2: Testing & Exploring	Critical Assessment of Assumptions	I felt uncomfortable with traditional societal expectations.
Stage 4	JOT2: Testing & Exploring	Recognition that others shared a similar transformation	I realized that other people also questioned their beliefs.
Stage 5	JOT2: Testing & Exploring	Exploration of new actions and roles	I thought about acting in a different way from my usual beliefs and roles.

Stage 6	JOT3: Affirming & Connecting	Development of an action plan	I tried to figure out a way to adopt these new ways of acting.
Stage 7	JOT3: Affirming & Connecting	Acquisition of skills and knowledge for implementing the action plan	I gathered the information I needed to adopt these new ways of acting.
Stage 8	JOT3: Affirming & Connecting	Implementing the plan	I tried out new roles so that I would become more comfortable or confident in them.
Stage 9	JOT3: Affirming & Connecting	Development of self-confidence and competence in new roles	I began to think about the reaction and feedback from my new behavior.
Stage 10	JOT4: Integration of new perspectives	Reintegration into life based on new perspectives	I took action and adopted these new ways of acting.

**Habits of Mind:** The survey included six items assessing changes in students' habits of mind across the six dimensions: philosophical, moral and ethics, psychological, sociological, epistemic, and aesthetic. These items were assessed as dichotomous response items (Yes/No).

#### 4.3.2. Qualitative data collection

The survey included six open-ended questions, adapted from Strange and Gibson (2017), focused on the nature of transformative learning experiences and the factors contributing to them.

1. During your study abroad program, did you experience a situation that changed your beliefs or values?
2. Do you think that your study abroad program changed your expectations in life?
3. What was the most important thing you learned about the world during your study abroad program?
4. What have you learned about yourself during your study abroad program?
5. In what ways do you think that your study abroad program impacted your life?
6. Do you think that your study abroad program by its structure and content was adequate to meet your goals?

## 5. Data analysis and findings

In this section, we present the data analysis processes and the results obtained from analysing the quantitative and qualitative phases of this study.

### 5.1. Quantitative data analysis

The quantitative data from the survey was analyzed using descriptive statistics to determine the extent of transformative learning experienced by the participants. The analysis involved a detailed examination of the mean distribution of responses corresponding to each stage of transformative learning, enabling the identification of stages that may have been more prevalent among the participants. Mann-Whitney U-test was employed to determine any observed differences in the extent of transformative learning between the two cohorts (France and Ghana).

To ascertain the effectiveness and interrelatedness of the transformative learning values obtained from learning activity survey (LAS) scale and habit of mind scale, a correlation test was conducted. This examination aimed to establish whether, when jointly utilized in a survey, these two scales synergistically depict the transformative learning phenomenon. The focus was on enhancing the overall assessment's validity by determining the extent to which these scales complement each other in accurately representing transformative learning.

### 5.2. Quantitative results

Table (5) presents agreement scores recorded by students in the France and Ghana cohorts for each stage of Mezirow's transformative learning theory. Stage wise scores are then summarized as journey of transformation scores. As shown in Table (5), most students reported experiencing the ten stages of transformative learning, with their responses ranging between 2.7 (Likert interpretation = 'slightly agree') to 4.3 (Likert interpretation = 'agree').

The highest mean score for the France cohort was observed for stages 6 and 9, corresponding to the third phase of journey of transformation, Affirming and Connecting (involving experimenting with new perspectives), and the lowest mean score was observed for stage 4, corresponding to the second phase of journey of transformation, Testing and Exploring (involving critical self-reflection). Comparing the scores for Ghana students, the highest mean score was observed for stage 1, corresponding to the first phase of journey of transformation, Discontent- encountering disorienting dilemmas, and the

lowest mean score was observed for stage 4, corresponding to the second phase of journey of transformation, Testing and Exploring - critical self-reflection.

**TABLE (5)**

STAGES OF TRANSFORMATIVE LEARNING AND THE JOURNEY OF TRANSFORMATION

Stage	Mezirow's Stages of Transformative Learning						Journey of Transformation			
	Total (N = 32)		France (n = 17)		Ghana (n = 15)		Phase	Total (N = 32)	France (n = 17)	Ghana (n = 15)
	M	SD	M	SD	M	SD		M	M	M
1	4.2	1.24	3.7	1.17	4.9	1.03	JOT 1	3.91	3.49	4.38
2	3.3	1.11	3.1	1.32	3.4	0.83				
3	3.8	1.3	3.6	1.27	3.9	1.36	JOT2	3.46	3.16	3.80
4	2.7	1.15	2.3	0.92	3.1	1.25				
5	3.9	1.16	3.5	1.01	4.4	1.18				
6	4	1.03	4	1.27	4.1	0.7	JOT3	4.09	3.93	4.28
7	4	1.06	3.9	1.22	4.2	0.86				
8	4.3	1.37	3.8	1.55	4.8	0.94				
9	4	1.2	4	1.41	4.1	0.96				
10	4	1.19	3.9	1.45	4.1	0.83	JOT4	4.00	3.88	4.13

Results from the independent samples Mann-Whitney U-test revealed statistically significant differences in the transformative learning scores between students who visited France and those who visited Ghana. In the first phase of the journey of transformation, data suggested a marginally significant difference in scores of the two cohorts ( $U = 192.5$ ,  $z = 2.468$ ,  $p = .056$ ). Similarly, in the second phase, the test indicated a significant difference ( $U = 188.5$ ,  $z = 2.324$ ,  $p = .020$ ) between the two cohorts. These findings point towards a possible association where American students visiting Ghana might be more likely to report higher levels of disorienting dilemma and self-reflection as compared to their counterparts who visited France.

**FIGURE (2)**

DISTRIBUTION OF SELF-REPORTED CHANGE IN HABITS OF MIND

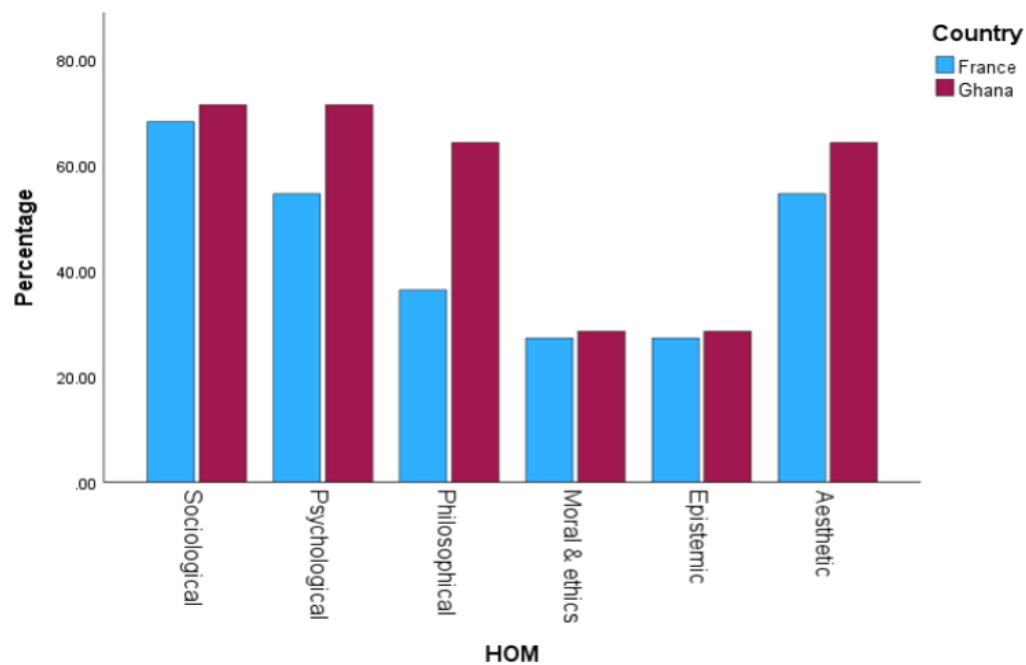


Figure (2) represents the percentage of students who reported experiencing changes in their habit of mind (HOM) across cohorts from France and Ghana. Most of the students from both cohorts reported changes in sociological (71.4% for Ghana, and 68.2% for France), psychological (71.4% for Ghana, and 54.5% for France), and aesthetic dimension (64.3% for Ghana, and 55.4% for France) of habit of mind. In contrast, fewer students from both cohorts reported changes in epistemic (28.6% for Ghana, and 27.2% for France), and moral and ethics dimensions (28.6% for Ghana, and 27.3% for France). However, as a trend, more students in the Ghana cohort have reported changes across all the dimensions as compared to the France cohort. A greater contrast is visible for the philosophical and psychological dimensions between the two cohorts with 27.9% and 16.9% more students in the Ghana cohort as compared to the France cohort experiencing changes in these dimensions. Fisher's exact test confirmed that there is a marginal difference ( $p=0.076$ ) between the changes realized in the philosophical dimension of habit of mind by the two cohorts, indicating American students in the Ghana cohort might be more likely to experience changes in philosophical dimension as compared to the students in the France cohort.

TABLE (6)

CORRELATION COEFFICIENTS BETWEEN THE FREQUENCY OF HABIT OF MIND DIMENSIONS

Total (N = 32)	JOT1	JOT2	JOT3	JOT4
HOM Frequency	.425*	.519**	.546**	.514**

\*  $p < 0.05$ \*\*  $p < 0.01$ 

All the four phases of the journey of transformation were found to be positively correlated with the frequency of changes in the habits of mind dimensions for each student as observed in Table (6). Students who noticed changes in more dimensions of habit of mind were also more likely to experience all phases of the journey of transformation. This relationship suggests that both measures (LAS and habit of mind) are correlated in assessing the depth and breadth of transformative learning experiences, as they indicate a consistent and meaningful connection between the development of habits of mind and the progression through the transformative learning journey.

### 5.3. Qualitative data analysis

Deductive qualitative analysis, grounded in Mezirow's transformative learning theory, was utilized which involved the systematic coding of open-ended survey responses from both cohorts. The derived codes were then categorized into the ten stages of Mezirow's transformative learning theory. For example, the part of a student's response "*want to learn about so many cultures and their languages*" was coded under the theme, Acquisition of skills and knowledge, and categorized under the sixth stage of TL. By analyzing the frequency of these codes, insights into the extent of transformative learning experienced by each cohort were gained. This method enabled the identification of which stages of transformative learning were more prevalent, offering a detailed understanding of the transformative learning process within each cohort.

Additionally, student responses from the open-ended questions were further systematically coded in terms of level of transformation with the help of a codebook (displayed in Table 7). The codebook was based on the Mezirow (1990) structure of reflection as summarized in Kitchenham (2008): content reflection (learning within meaning schemes), process reflection (learning new meaning schemes), and premise reflection (learning through meaning transformation). The codebook created comprised three levels of transformation described below:

**Profound Transformation (PT):** Profound transformation occurs only when learners engage in premise reflection, which occurs when learners encounter “a problem that cannot be resolved through neither present meaning schemes nor learning new meaning schemes” (Kitchenham, 2008, p. 111) leading the learner to redefine the problem with a new perspective and experience meaning transformation.

**Straightforward Transformation (ST):** Straightforward transformation occurs when learners engage in either content or process reflection where learners either work within their present meaning schemes or expand their meaning schemes by learning other compatible new meaning schemes. In both the processes, the learners present meaning structure and perspectives are not challenged or transformed, they only get expanded or complemented.

**No Transformation (NT):** No transformation occurs when learners do not engage in either of the three reflection processes, leading to their meaning schemes and perspectives remaining unaltered.

The five criteria described in the first column of the codebook in Table (7) presents the critical elements of the transformative learning process. Additionally, inductive qualitative analysis performed subsequently helped in capturing the emergent themes from the data.

TABLE (7)

CORRESPONDENCE BETWEEN THE CODING CRITERIA AND THE LEVELS OF TRANSFORMATION

Criteria	No Transformation (NT)	Straightforward Transformation (ST)	Profound Transformation (PT)	Illustrative Examples
Perspective Transformation Evidence	Self-Reported no change in beliefs and values	Learning within meaning schemes/Learning new meaning schemes	Transformed meaning perspectives	I always thought about [X] in a certain way, after this event, I have started thinking about [X] in a different way.
Disorienting Dilemma/ Experience	No Disorienting Dilemma	No Disorienting Dilemma	Existence of Disorienting Dilemma	I was confused when I encountered [X], I was not used to it.
Reflection	No reflection, just description of events	Content/ Process Reflection	Premise Reflection	While reflecting/thinking about [X], I wondered about the status quo/general

				approaches to this.
Critical Self Examination	No self-reflection, just description of events	Reflection on common/generic worldviews (not entirely personal)	Reflection of own assumptions, beliefs, self-concept, personal identity, and values	While reflecting/thinking about [X], I wondered how/why I usually approach it in a certain way.
Action/Future Action	Habitual/Non-Reflective Action - No evidence for future actions as a result of reflection	Thoughtful/Reflective Action	Evidence of future actions as a result of self-reflection/Changes in self-concept, personal identity, values	After this experience, I have decided to...

#### 5.4. Qualitative results

Table (8) describes the transformative journey of students from Ghana and France cohorts through the ten stages of Mezirow's transformative learning framework, as evident in their reflections. The third column in the table includes sample quotes from these students' reflective writing corresponding to the TL stage. The fourth column of the table denotes the frequency of students from both cohorts who experienced the respective stage, and the last two columns denote the corresponding percentages of students from each cohort whose experiences are registered. In the initial stages, both cohorts exhibited a balanced distribution, with 50% of students (among all those who experienced stage 1, JOT1) from each cohort experiencing disorienting dilemmas. However, a notable distinction emerged in Stage 2 (Self-Examination, JOT1), where only 4 (26%) students from the Ghana cohort (as opposed to none from France, 0%), engaged in introspection stemming from the disorienting dilemmas in the first phase of journey of transformation. Evidence related to experience of Stage 4 (JOT2) of the transformative learning process, associated with recognition of shared experiences, was not found in any of the students' reflections.

The evidence suggests that, with the exception of Stages 7 and 9 (JOT3), the Ghana cohort consistently demonstrated a higher prevalence of transformative experiences in their reflections as compared to the France cohort. The nuanced exploration of these transformation stages provides insight into the diverse ways in which students from Ghana and France cohorts navigate and internalize their cross-cultural experiences.

**TABLE (8)**

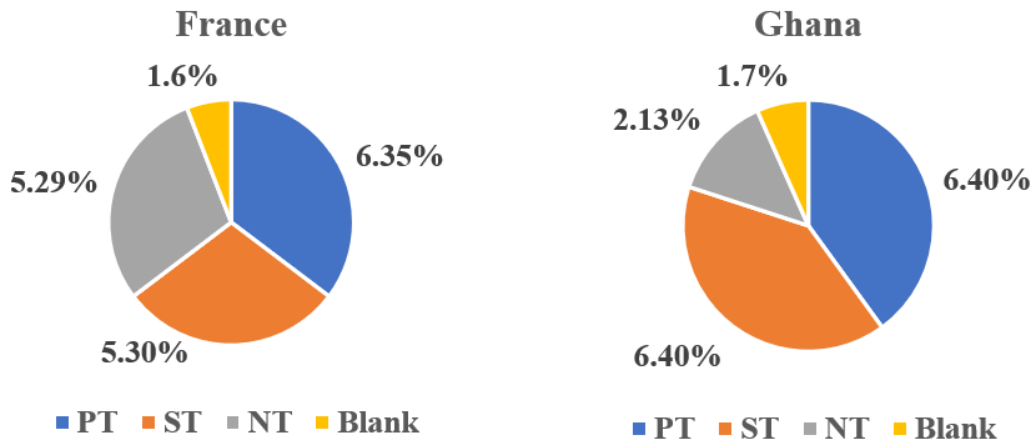
DISTRIBUTION AND ILLUSTRATIVE INSTANCES OF THE MEZIROW STAGES OF TRANSFORMATION

Stage #	Stages of Transformation	Example of instances	n	France %	Ghana %
Stage 1	Disorienting Dilemma	"I figured that in Africa there would be less infrastructure and while that was true it wasn't as little as I expected. There are a ton of similarities between here and Africa which surprised me."	22	64.7%	73.3%
Stage 2	Self- Examination	"...in America, we take a lot of things for granted. I knew that we were wasteful, but I didn't know how much we were until I went to Ghana.", "I learned that I tend to become more shy when I am placed in a place where I am not like every one around me, especially when I do not speak the same native language of others."	4	0%	26%
Stage 3	Critical Assessment of Assumptions	"After discussing some of the possibilities as to why Ghanaians and African-Americans are so politically different, I understood that a lot of it has to do with the culture and values that are taught in families."	15	35.3%	53.3%
Stage 4	Recognition that others shared a similar transformation	NULL	0	0%	0%
Stage 5	Exploration of new actions and roles	"I would like to live somewhere abroad for a longer period of time as well, and I'd like to study or work in different cultures to experience them and understand them better"	16	35.3%	66.7%

Stage 6	Development of an action plan	"the education systems are different everywhere it made me challenge myself to find affordable and fulfilling education.", "I hope to help or improve the quality of life for some of these people in the future...It made me passionate about helping others in every aspect possible"	9	17.6%	40%
Stage 7	Acquisition of skills and knowledge for implementing the action plan	"want to learn about so many cultures and their languages"	3	17.6%	0%
Stage 8	Provisional trying of new roles/Implementing the plan	"I learned that it is really fun and exciting to try new things like food and activities.", "whenever I had the option to try something new or go out, I said yes."	5	11.8%	20%
Stage 9	Development of self-confidence and competence in new roles	"I am a lot more confident in being able to work in a different country.", "During the trip, I was able to be more adventurous and get out of my shell more. "	10	35.3%	26.7%
Stage 10	Reintegration into life based on new perspectives	"Being a part of this amazing experience has given be a lot of perspective...", "it did changed how I think about things in life. It opened my eyes to not take a lot of things for granted."	11	17.6%	53.3%

In Figure (3) on the following page, it is observed that among the three levels of transformation (coded using Kitchenham's (2008) definitions) – PT (Profound Transformation), ST (Straightforward Transformation) and NT (No Transformation) – higher percentage of students observed profound and straightforward transformation in the Ghana cohort and a significantly lower percentage of students observed no transformation, as compared to the France cohort.

**FIGURE (3)**  
LEVEL OF TRANSFORMATION CALCULATED THROUGH QUALITATIVE ANALYSIS



NOTE: PT- PROFOUND TRANSFORMATION, ST- STRAIGHTFORWARD TRANSFORMATION, NT- NO TRANSFORMATION, BLANK-QUESTION NOT ATTEMPTED

## 6. Integration

In this section, we will present the integrated results from qualitative and quantitative analysis using merging – “procedures that interrelate quantitative data and results with qualitative data and results” (Plano Clark, 2019, p. 110) to generate an enhanced understanding of students’ transformative learning experiences in France and Ghana. We will present two types of integration results.

### 6.1. Integration of LAS (Quan) with frequency analysis of Mezirow’s stages (Qual)

Joint displays are visual elements that help in bringing the results of the quantitative and qualitative together to draw insights and meta inferences (Guetterman et al., 2015). The inferences drawn from merging the results obtained from both phases are called meta-inferences. Table (9) represents a joint display of the quantitative and qualitative results, where the percentage of students who selected 'agree' (Likert score = 5) and 'highly agree' (Likert score = 6) on the LAS corresponding to each of the ten stages are tabulated against the percentage of students whose reflection showed experiencing the TL stage in the qualitative analysis through deductive coding. From our joint display (Table 9), both the quantitative and qualitative results suggest that students in the Ghana cohort may have experienced more disorienting dilemmas (JOT1) compared to the France cohort, which likely led them to experience subsequent

stages of critical reflection (JOT2). The joint display indicates that students in the Ghana cohort may have undergone more stages of the Mezirow's transformative learning process compared to the France cohort. However, the joint display also indicates that while the Ghana cohort might have experienced the initial stages more (disorienting dilemma & critical reflection on prior assumptions), the France cohort might have had more opportunities to experience the later stages of transformative learning (exploring different perspectives, worldviews, and reflecting on personal and professional growth).

The joint display (see Table 9) also highlighted some contradictory findings. For example, in Stage 4 —recognition of shared experiences — the quantitative results indicated that students in the Ghana cohort may have experienced shared discomfort with their peers. However, qualitative reflections did not reveal any codes related to shared experiences.

**TABLE (9)**  
FREQUENCY ANALYSIS OF THE STAGES OF TRANSFORMATION

JOT	Stage	Description	Quantitative Results		Qualitative Results	
			France (n = 17)	Ghana (n = 15)	France (n = 17)	Ghana (n = 15)
<b>JOT1: Discontent</b>	1	Disorienting Dilemma	47.1%	<b>86.7</b>	64.7%	<b>73.3%</b>
	2	Self-Examination	<b>11.8%</b>	6.7%	0%	<b>26.7%</b>
<b>JOT2: Testing &amp; exploring</b>	3	Critical Assessment of Assumptions	0%	<b>6.7%</b>	35.3%	<b>53.3%</b>
	4	Recognition of shared experiences	11.8%	<b>60%</b>	0%	0%
	5	Exploring options for new behaviours	29.4%	<b>33.3%</b>	35.3%	<b>66.7%</b>
<b>JOT3: Affirming &amp; connecting</b>	6	Planning a course of action	29.4%	<b>80%</b>	17.6%	<b>40%</b>

	7	Acquiring of knowledge	<b>35.3%</b>	26.7%	<b>17.6%</b>	0%
	8	Trying new roles	<b>35.3%</b>	33.3%	11.8%	<b>20%</b>
	9	Building confidence	<b>47.1%</b>	40%	<b>35.3%</b>	26.7%
<b>JOT4: New Perspectives</b>	10	Integration	<b>35.3%</b>	33.3%	17.6%	<b>53.3%</b>

NOTE: BOLD NUMBERS DENOTE THE COHORT WITH THE HIGHER PERCENTAGE OF STUDENTS FOR THE GIVEN TL STAGE

## 6.2. Integration of LAS (Quan) with level of transformation (Qual)

Scatterplots for France and Ghana as an integration display are plotted in Figure (4a-d) on the following pages to get a complete picture of the transformative experiences. The distance of the points from the x axis denotes the extent of agreement shown by each student for the transformation phases. The points on the quadrants are labeled as the level of transformation that resulted from the qualitative analysis of the student reflections on the open-ended questions. We assumed that students coded for profound or straightforward transformations will have higher JOT values across all the four phases. This hypothesis seems validated when we observe the France cohort across all phases of JOTs. However, we have mixed observations for Ghana cohort with some students showing high agreement on journey of transformation phases and no evidence of transformation in their reflection on the open-ended questions- vice versa also seems validated.

The coherence between the results obtained from the integration of qualitative and quantitative strands can be measured in terms of “fit of integration” (Fetters et al., 2013). In our study, we observed evidence for all the three types of fit: Confirmation, Expansion and Discordance. The next section will elaborate on these different types of fit.

## 6.3. Meta inferences

### 6.3.1. France cohort

For the France cohort, results from both the strands (quantitative and qualitative) were in agreement with each other to a great extent. Students who were found to have experienced ‘no transformation’ in the qualitative phase showed lower agreement for all the four stages of the journey of transformation in the quantitative phase, as can be observed from the Joint Displays in Figure

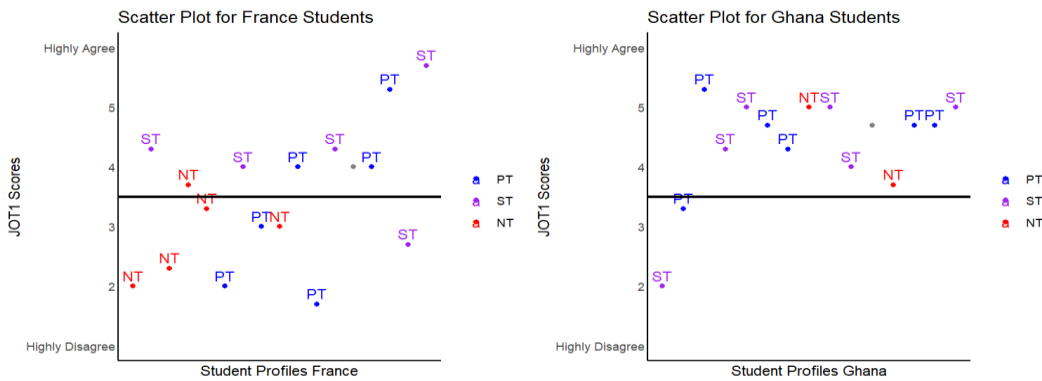
(4a-d) (Confirmation). However, there were several students who showed evidence of profound transformation in their qualitative reflections but in parallel showed lower agreement regarding experiencing the journey of transformation phases in the survey (Discordance). For example, in Figure (4a), we can observe three students who experienced profound transformation (as determined from their qualitative reflections) but showed lower agreement regarding survey items corresponding to the first phase journey of transformation.

### 6.3.2. Ghana cohort

For the Ghana cohort, integration of results from both strands (quantitative and qualitative) cohort show that several students who showed lower agreement for all the four stages of the journey of transformation in the quantitative phase, were found to have profound or straightforward transformation in the qualitative phase (Discordance). And the two students who showed no transformation in their reflections for the qualitative items displayed positive agreement on the three of the four stages (JOT1, JOT3 and JOT4) of journey of transformation (Discordance). These findings led us to speculate the possible reasons for the observed contradictions.

**FIGURE (4A)**

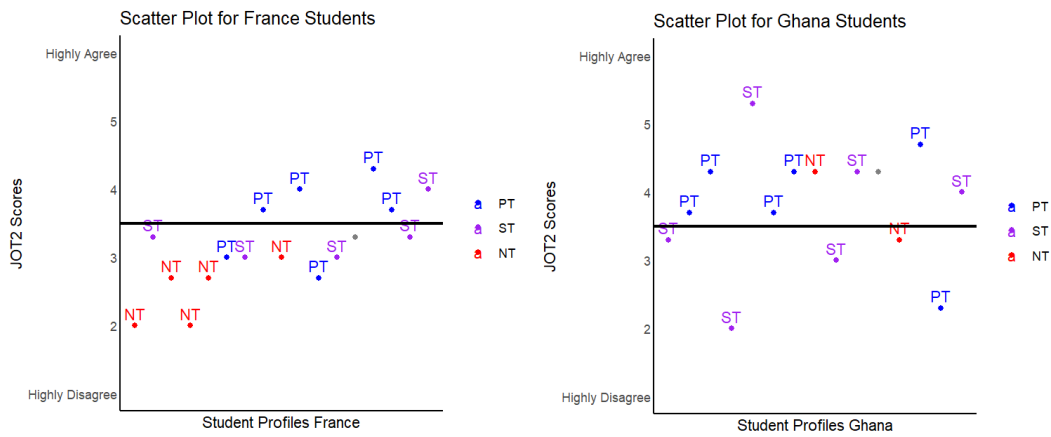
COMPARISON FOR JOT1 SCORES AND TRANSFORMATION LEVELS OF FRANCE AND GHANA STUDENTS



NOTE: PT- PROFOUND TRANSFORMATION, ST- STRAIGHTFORWARD TRANSFORMATION, NT- NO TRANSFORMATION, BLANK-QUESTION NOT ATTEMPTED

**FIGURE (4B)**

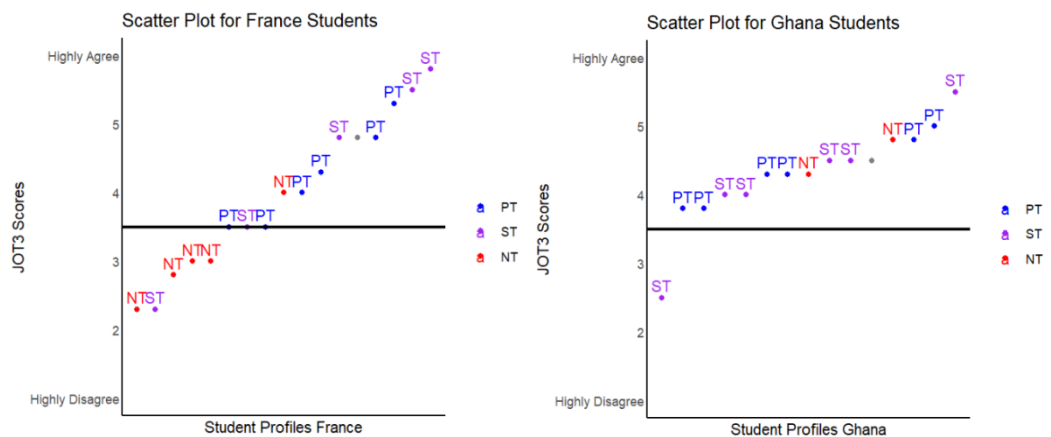
COMPARISON FOR JOT2 SCORES AND TRANSFORMATION LEVELS OF FRANCE AND GHANA STUDENTS



NOTE: PT- PROFOUND TRANSFORMATION, ST- STRAIGHTFORWARD TRANSFORMATION, NT- NO TRANSFORMATION, BLANK-QUESTION NOT ATTEMPTED

**FIGURE (4c)**

COMPARISON FOR JOT3 SCORES AND TRANSFORMATION LEVELS OF FRANCE AND GHANA STUDENTS



NOTE: PT- PROFOUND TRANSFORMATION, ST- STRAIGHTFORWARD TRANSFORMATION, NT- NO TRANSFORMATION, BLANK-QUESTION NOT ATTEMPTED



phase of journey of transformation, indicating that students who went to Ghana may have encountered situations posing disorienting dilemmas to their thought process and belief systems. For both cohorts, the lowest mean scores were observed in the second phase of the journey of transformation, suggesting that both study-abroad programs did not trigger students' critical self-reflection.

Statistical analysis suggests significant differences between the two cohorts' transformative learning scores. The quantitative results indicated that Ghana cohort exhibited higher levels of disorienting dilemma and self-reflection compared to those in France cohort. Greater number of students in Ghana reported changes across all dimensions of habits of mind, especially in philosophical and psychological dimensions when compared with France cohort.

The results from the quantitative strand indicate that American students in the Ghana cohort appeared more likely to experience transformative learning, particularly in philosophical and psychological dimensions, compared to those in the France cohort. Experiencing disorienting dilemmas provides an opportunity to transform one's existing personal beliefs, stereotypes, and assumptions. Davis and Knight (2025) observed that American students traveling to culturally distant countries, such as Ghana (Table 1), tend to experience greater cultural discomfort while navigating these differences. In contrast, those visiting less culturally distant countries, like France (Table 1), report feeling less discomfort and reflect more on personal growth. Our study found similar results.

*Qualitative RQ2: How do students describe the nature of their transformative learning experiences in the context of their study abroad in France compared to Ghana?*

In the qualitative strand, the results generated were pointing towards different manifestation of disorienting dilemmas that students face in study abroad. The thought-provoking situations or scenarios, referred to as “disorienting dilemma” by Mezirow challenges “meaning perspectives” and “assumptions” of the students and lead to the development of transformed perspectives. Disorienting dilemma is individualistic in nature, it varies for every individual. The most common sources of disorienting dilemmas evident in the Ghana cohort were – interaction with local people and culture; observing living conditions of locals; self-introspection for environmental consciousness; and stereotypes or assumptions regarding African countries. The common themes observed from the Ghana cohort's reflections were – increase in

gratitude for life; increase in empathy; increase in cultural awareness and appreciation; increase in comfort with ambiguity; increase in self-awareness; realization of global oneness; increase in motivation for study abroad; gaining an overall positive perspective; and respect for all cultures. The most common sources of disorienting dilemmas evident in France cohort were – observed differences between US and European cultures and society; stereotypes/assumptions regarding country culture and values; and observed political scenarios. The common themes observed from students' reflections in the France cohort were – increased motivation for travel and living abroad; increase in confidence regarding professional preparedness; increase in self-awareness; realization of global oneness; and increase in exploring new cultures and languages.

We observed some crucial aspects regarding the nature of transformative learning experiences. As per Mezirow's theory (1978, 1981, 1990, 1997, 2000), learning within meaning schemes and learning new meaning schemes leads to straightforward transformation but transforming meaning schemes into meaning perspectives leads to profound transformation thereby leading to transformative learning (Kitchenham, 2008). In our study, the qualitative strand suggested that more students from the Ghana cohort may have experienced profound transformative experiences where they were able to question their previously held beliefs and assumptions, critically reflect on their own values and belief system, and attain a shift in their perspectives. However, our data suggests that most students in the France cohort were either learning within their already developed meaning schemes or learning new meaning schemes, since most of them did not confront any situation that challenged their previously held beliefs or habits of mind.

Even though both cohorts of students talked about scenarios or situations which were unique or different for them, for many students across both cohorts, these situations were either not challenging for them, or the reflective skills and/or programmatic support necessary for learners to complete the stages of transformative learning may have been insufficient.

Therefore, one cannot rule out the role of critical reflection skills that the students possess, since the diagnosis of transformative learning depends on it (Mezirow, 1990; Taylor, 2017). Critical reflection is one of the most crucial parts of Mezirow's transformative learning theory. It was observed that students used specific lenses to reflect on their experiences. For example, one student differentiated their experience from others by stating they had extensive prior

travel experience. Two other students used their African American identity as a reflective lens to describe their experience. For example, one student reflected on their experience by stating,

I have always taken pride in being African American and lifting my head high whenever I talk about what my ancestors had to go through in the slave trade and on. However, being immersed in African culture and going straight to the source made me want to appreciate the little things more.

Many students reflect on their experiences by referring to their personality attributes and how it affected their experiences directly or indirectly. These observations suggest that students' personal factors, demographic factors, prior experiences and their overall reflective thinking skills might dictate their transformative experiences to some extent. All these factors influence the extent and nature of critical reflection that the student experiences.

*Mixed RQ3: In what ways does combining the quantitative data from the transformative learning instrument with the qualitative reflections of students' experiences enhance our understanding of the differences in transformative learning experiences between students who studied abroad in France and those in Ghana?*

Our integration results are twofold: first, it indicates complementarity since results from both strands indicate that the Ghana cohort may have had more opportunities to experience transformative learning than the France cohort. Second, it indicates some contradictions, as the intervention being studied is a “short-term” study abroad program, whereas Mezirow's transformative learning theory was originally operationalized for long-term interventions and capturing deep, profound life-changing events. Mezirow's theory states that learners who have encountered disorienting dilemmas, are likely to enter the 10-stage transformation process. However, the capacity to do so is individual specific (Mezirow, 1981). Whether such internal confrontations occur in a classroom, in a physical context in-country, virtually, or even through extensive self-instruction in reading and listening, the existence of the dilemma remains constant, even if the intensity of one's reaction may differ (Slavich & Zimbardo, 2012).

Literature suggests the more distant the culture, the more disorienting the dilemma (Leaver & Campbell, 2023). This was true for our analysis of the extent of disorienting dilemmas faced by France and Ghana cohorts, with

results showing that more students in the Ghana cohort may experience disorienting dilemmas. However, the way a learner reflects on the disorienting aspects of these dilemmas determines the nature of their transformative experience. Through deep assessment of personal beliefs and assumptions that may have been socially or culturally constructed, a learner identifies their own internal perspectives and gains self-awareness (Rogers, 1980). The highest learning potential in study abroad occurs when students experience heightened moments of cultural disorientation in unfamiliar cultural contexts and have experienced facilitators to guide them through reflection around intercultural differences (Gibson et al., 2023). In our study, the students in the Ghana cohort displayed more instances for transformative learning, possibly owing to the cultural disorientation leading to disorienting dilemmas.

While there is limited knowledge on the impact of destination on learning outcomes of study abroad programs, some studies have discussed the factors that lead to destination-selection by students for such experiential learning opportunities. Only 4% of students chose France as a study abroad destination as opposed to 57% choosing Europe in the 2006-2007 academic year (Nyaupane et al., 2011). While student motivation, social norms, perceptions of social benefits and social consequences, and prior travel experience can all play into student self-selection of destinations, there are also organizational and logistical challenges such as forming institutional partnerships, changing perceptions of negative stereotypes, costs, and level of socio-economic development that inhibit institutions to organize STSAs to destinations with higher cultural distances even when their benefits are known (Sirakaya et al., 2001).

## **8. Limitations and future work**

In this study, we found some evidence that study-abroad destinations impact the extent and nature of transformative learning outcomes of students. However, it is important to note that the study relied on a relatively smaller sample. As a result, the generalization of these findings is limited. In order to minimize the impact of this limitation, our study used a convergent mixed method approach which allowed us to collect a variety of data from a small sample of participants, thus offsetting the weakness of a quantitative study (small sample size) with the strength of a qualitative study (detail and depth) (Creswell & Plano Clark, 2018).

Another significant limitation of our study was that we did not analyze demographic data of the participants. The demographic and cultural background of participants impact their transformative learning experiences. Further, demographic factors may interact with other variables related to the study abroad destination (language, culture, familiarity), and may influence the students' transformative outcomes of students. Future work will involve studying such intersections in identity and learning outcomes.

Future work will also focus on finding substantial correlations between students' attributes, such as personality, learning styles, and demographics, and their transformative experiences at different study-abroad destinations. We recommend conducting this investigation using a larger sample size, multiple study-abroad programs, and possibly utilizing a control group.

## **9. Conclusion**

Transformative learning is initiated when learners encounter disorienting dilemmas. The cultural context in which learning takes place might play a role in the transformative potential of study abroad programs. This research adds to the limited literature on the impact of study abroad destinations on transformative learning experiences of students. Given the ever-increasing popularity and feasibility of short-term study abroad programs in engineering formation, there is a need to balance the duration constraint of STSAs and the nature of transformative learning process. The limited duration of STSAs acts as a hurdle in achieving deep and long-lasting transformative experiences; however, students' perception provides a lens to capture the transformative potential of their journey. Study abroad destinations which have a higher cultural distance from the host institutes have the potential to offer greater opportunities for impactful experiences in a shorter amount of time.

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## Ethical approval

This study was reviewed and approved by the Institutional Review Board (IRB) at the University of Cincinnati 2021-0399. All participants provided informed consent prior to participation, and all procedures were conducted in accordance with relevant ethical guidelines and regulations.

## Declaration of competing interest

The authors declare no competing interests.

## Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## CRedit author statement

**Sukeerti Shandliya:** Formal Analysis, Validation, Visualization, Writing - Original Draft. **Jutshi Agaral:** Formal Analysis, Writing - Review & Editing. **Cedrick Kwuimy:** Investigation, Resources, Writing - Review & Editing, Supervision, Funding acquisition

## References

- Anderson, P. H., & Lawton, L. (2015). The MSA: An instrument for measuring motivation to study abroad. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 26(1), 53-67. <https://doi.org/10.36366/frontiers.v26i1.357>
- Barbuto Jr, J. E., Beenen, G., & Tran, H. (2015). The role of core self-evaluation, ethnocentrism, and cultural intelligence in study abroad success. *The International Journal of Management Education*, 13(3), 268-277. <https://doi-org.uc.idm.oclc.org/10.1016/j.ijme.2015.07.004>
- Bell, H. L., Gibson, H. J., Tarrant, M. A., Perry III, L. G., & Stoner, L. (2016). Transformational learning through study abroad: US students' reflections on learning about sustainability in the South Pacific. *Leisure Studies*, 35(4), 389-405. <https://doi.org/10.1080/02614367.2014.962585>
- Chiang, T. M., & Yao, J. F. (2020). Transformative Learning Experiences through Short-term Study Abroad programs. *Journal of Transformative Learning*, 7(1), 3.
- Cranton, P. (2016). *Understanding and promoting transformative learning: A guide to theory and practice*. Routledge.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage.
- Davis, K. A., & Knight, D. B. (2025). Exploring how personal and program characteristics inform the experiences of engineering students abroad. *Journal of Engineering Education*, 114(1), <https://doi-org.uc.idm.oclc.org/10.1002/jee.20625>

- Donnelly-Smith, L. (2009). Global learning through short-term study abroad. *Peer Review*, 11(4), 12-16.
- Douglas, C., & Jones-Rikkens, C. G. (2001). Study abroad programs and American student worldmindedness: An empirical analysis. *Journal of Teaching in International Business*, 13(1), 55-66. [https://doi-org.uc.idm.oclc.org/10.1300/J066v13n01\\_04](https://doi-org.uc.idm.oclc.org/10.1300/J066v13n01_04)
- Engle, L., & Engle, J. (2003). Study abroad levels: Toward a classification of program types. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 9(1), 1-20. <https://doi.org/10.36366/frontiers.v9i1.113>
- Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs— principles and practices. *Health Services Research*, 48(6), 2134–2156. <https://doi.org/10.1111/1475-6773.12117>
- Gibson, A., Spira-Cohen, E., Sherman, W., & Namaste, N. (2023). Guided disorientation for transformative study abroad: impacts on intercultural learning. *Studies in Higher Education*, 48(8), 1258-1272. <https://doi-org.uc.idm.oclc.org/10.1080/03075079.2023.2193215>
- Goldstein, S. B. (2022). A systematic review of short-term study abroad research methodology and intercultural competence outcomes. *International Journal of Intercultural Relations*, 87, 26-36. <https://doi-org.uc.idm.oclc.org/10.1016/j.ijintrel.2022.01.001>
- Guetterman, T. C., Fetters, M. D., & Creswell, J. W. (2015). Integrating quantitative and qualitative results in health science mixed methods research through joint displays. *The Annals of Family Medicine*, 13(6), 554–561. <https://doi.org/10.1370/afm.1865>
- Harrison, J. K., & Voelker, E. (2008). Two personality variables and the cross-cultural adjustment of study abroad students. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 17, 69-87. <https://doi.org/10.36366/frontiers.v17i1.245>
- Hofstede, G. (1983). National cultures in four dimensions: A research-based theory of cultural differences among nations. *International Studies of Management & Organization*, 13(1/2), 46–74.
- Iqbal, Z. (2019). Eastern promises fulfilled: The differential impact of marketing-focused short-term study abroad programs in India and Japan. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 31(2), 158-179. <https://doi.org/10.36366/frontiers.v31i2.460>
- Iskhakova, M., & Bradly, A. (2022). Short-term study abroad research: A systematic review 2000-2019. *Journal of Management Education*, 46(2), 383-427. <https://doi-org.uc.idm.oclc.org/10.1177/10525629211015706>
- Jones, M., Higgins, H., & Parker, M. (2023). Exploring the influence of an Ethiopian short-term study abroad experience on pre-service teachers' transformative learning and reflection skills. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 35(3), 1-23. <https://doi.org/10.36366/frontiers.v35i3.702>
- King, K. P. (Ed.). (2009). The handbook of the evolving research of transformative learning: Based on the Learning Activities Survey. IAP.
- Kitchenham, A. (2008). The evolution of John Mezirow's transformative learning theory. *Journal of Transformative Education*, 6(2), 104-123. <https://doi.org/10.1177/1541344608322678>
- Kraiger, K., Ford, J. K., & Salas, E. (1993). Application of cognitive, skill-based, and affective theories of learning outcomes to new methods of training evaluation. *Journal of applied psychology*, 78(2), 311. <https://doi.org/10.1037/0021-9010.78.2.311>
- Kwuimy, C., & Yoon, S. Y. (2023). First-year Engineering Students' Motivation to Participate in Virtual International Collaborative Experiential Program (VICEP): An Expectancy-Value-Cost Approach. *Journal of International Engineering Education*, 5(1), 1. <https://doi.org/10.23860/jiee.2023.05.01.01>

- Leaver, B. L., & Campbell, C. (2023). The transformative power of the study abroad experience. *L2 Journal: An electronic refereed journal for foreign and second language educators*, 15(2). <https://doi.org/10.5070/L215260151>
- Mezirow, J. (1978). Perspective transformation. *Adult Education*, 28(2), 100-110. <https://doi.org/10.1177/074171367802800202>
- Mezirow, J. (1981). A critical theory of adult learning and education. *Adult Education*, 32(1), 3-24. <https://doi.org/10.1177/074171368103200101>
- Mezirow, J. (1990). *Fostering critical reflection in adulthood* (pp. 1-20). San Francisco: Jossey-Bass Publishers.
- Mezirow, J. (1997). Transformation theory out of context. *Adult education quarterly*, 48(1), 60-62. <https://doi.org/10.1177/074171369704800105>
- Mezirow, J. (2000). Learning to think like an adult. *Learning as transformation: Critical perspectives on a theory in progress*, 3-33.
- Mody, M., Suess, C., Lehto, X., Adler, S. (2017). Study abroad and the development of college students' travel venturesomeness. *Tourism Management Perspectives*, 24, 126-138. <https://doi.org/10.1016/j.tmp.2017.08.005>
- Moorhead, B., Boetto, H., & Bell, K. (2014). India and US: Student development of professional social work identity through a short-term study abroad program. *Social Work Education*, 33(2), 175-189. <https://doi.org/10.1080/02615479.2013.768614>
- Nyaupane, G. P., Paris, C. M., & Teye, V. (2011). Study abroad motivations, destination selection and pre-trip attitude formation. *International Journal of Tourism Research*, 13(3), 205-217. <https://doi-org.uc.idm.oclc.org/10.1002/jtr.811>
- Omachinski, K. M. (2013). Communication and cultural implications of short-term study-abroad experiences of engineering students. *Connexions: International Professional Communication*, 1(2), 43-77.
- Petersdotter, L., Niehoff, E., & Freund, P. A. (2017). International experience makes a difference: Effects of studying abroad on students' self-efficacy. *Personality and Individual Differences*, 107, 174-178. <https://doi-org.uc.idm.oclc.org/10.1016/j.paid.2016.11.040>
- Plano Clark, V. L. (2019). Meaningful integration within mixed methods studies: Identifying why, what, when, and how. *Contemporary Educational Psychology*, 57, 106-111. <https://doi.org/10.1016/j.cedpsych.2019.01.007>
- Rogers, C. (1980). *A Way of Being*. Houghton Mifflin.
- Shandliya, S., Yoon, S. Y., Raju, G., & Kwuimy, C. A. (2023, October). Engineering Students' Transformative Learning Experiences from A Virtual International Collaborative Experiential Program. In *2023 IEEE Frontiers in Education Conference (FIE)* (pp. 1-6). IEEE. <https://doi.org/10.1109/FIE58773.2023.10343429>
- Shandliya, S., Kwuimy, C., & Yoon, S. Y. (2024, June). Exploring the Relationship Between Student Characteristics and their Transformative Experience from Short-Term Study Abroad Programs. *American Society for Engineering Education*. <https://doi.org/10.18260/1-2--47440>
- Sirakaya, E., Sonmez, S. F., & Choi, H. S. (2001). Do destination images really matter? Predicting destination choices of student travellers. *Journal of Vacation Marketing*, 7(2), 125-142. <https://doi.org/10.1177/135676670100700203>
- Slavich, G. M., & Zimbardo, P. G. (2012). Transformational Teaching: Theoretical Underpinnings, Basic Principles, and Core Methods. *Educational Psychology Review*, 24(4), 569-608. <https://doi.org/10.1007/s10648-012-9199-6>
- Strange, H., & Gibson, H. J. (2017). An investigation of experiential and transformative learning in study abroad programs. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 29(1), 85-100. <https://doi.org/10.36366/frontiers.v29i1.387>

- Taylor, E. W. (2017). Critical reflection and transformative learning: A critical review. *PAACE Journal of Lifelong Learning*, 26(2), 77-95.
- Tien, D. T. K., Namasivayam, S. N., & Ponniah, L. S. (2019). A review of transformative learning theory with regard to its potential application in engineering education. *AIP Conference Proceedings*, 2137(1). <https://doi.org/10.1063/1.5121003>
- Vandever, R., & Menefee, M. L. (2006). Study abroad, international internship and experiential learning: A world-class adventure in learning. In *Decision Sciences Institute Southwest Region (SWDSI) 2006 Annual Conference*, pp. 200-207.
- Varela, O. E. (2017). Learning outcomes of study-abroad programs: A meta-analysis. *Academy of Management Learning & Education*, 16(4), 531-561. <https://doi.org/10.5465/amle.2015.0250>
- Wood, J., & Jobe, J. (2020). Short-Term Travel Abroad to Uganda & Guatemala: A Preliminary Assessment of Student Transformative Learning. *Journal of Transformative Learning*, 7(1). 81-93.

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