

Japanese University Students' Pre-Course Perceptions of American Society, Group Formation, and Discrimination: Implications for Needs Analysis in Intercultural Teaching

Yuki Amaki

College of Economics, Aoyama Gakuin University, Tokyo, Japan

yukiamaki@gmail.com

ORCID: 0000-0002-6794-8870

ABSTRACT

This study was conducted as a pre-course survey in a university class on American society and culture to identify students' perceptions before formal instruction. It aimed to explore how these initial perceptions could inform intercultural teaching and learning, particularly regarding classroom design. Students' pre-course responses were treated as a form of needs analysis, examining what they suggested about designing a course on American society. Text mining and co-occurrence network analysis were used to examine the responses of 127 Japanese university students to open-ended questions. The analysis focused on how students described American society, group formation, and differences between discrimination and distinction. The results suggested that students often described positive values and social issues. They emphasized psychological factors in group formation and evaluated discrimination by considering fairness in specific situations. These patterns suggest that students do not enter the classroom with fixed views. Students' initial ideas can provide starting points for classroom discussions, reflections, and activities, encouraging them to reconsider their interpretation of cultural differences. The findings also suggest how text-mining tools can turn students' words into concrete input for course design, indicating a practical, low-cost model for technology-enhanced needs analysis that could be used in other language and intercultural classrooms.

Keywords: Intercultural education, text mining, American society, needs analysis, undergraduate students

1. INTRODUCTION

Contemporary society faces the critical challenge of addressing how people engage with others whose cultures and values differ from their own and develop a mutual understanding (Bennett, 1993). In educational settings that aim to foster intercultural understanding, the preconceptions, interpretive habits, and value judgments that students bring when encountering other societies must be considered. Before learners can engage critically with social complexity, educators must understand the initial assumptions through which students conceptualize other cultures because learners interpret new information through culturally shaped frameworks of meaning (Bruner, 1996). In this context, American society is often associated with "freedom," "individualism," and "diversity," while simultaneously discussed in relation to racial discrimination, gun violence, political division, and economic inequality.

Understanding what students already know is helpful before designing any course. In curriculum planning, this step is often called a needs analysis. It typically asks what learners already know, what gaps remain, and what type of instruction would be useful. However, this step is often skipped in intercultural education. Courses on topics such as American society are often designed with general aims, such as raising awareness or reducing stereotypes, without first identifying students' beliefs. This study treats students' pre-course written responses as a form of needs analysis. Rather than assuming what students think, this study examines what students wrote and considers what this means for designing a course on American society.

This type of needs analysis has traditionally relied on a teacher's own reading of learner responses, which becomes more difficult to manage as class size increases and can be shaped by the individual reader's interpretive habits. Computational text-mining tools offer an alternative. They enable a large set of learner-generated texts to be processed systematically to identify recurring lexical patterns and co-occurrence structures that would be difficult to notice through manual reading alone. Therefore, applying such tools to pre-course responses represents a technology-enhanced method for conducting needs analysis that a teacher could realistically repeat every time a course is offered rather than treat as a one-time research exercise. This study explores that possibility by using KH Coder to analyze learner-generated data and considers what computational approach can contribute to instructional design in intercultural education.

Clarifying how Japanese university students conceptualize American society is relevant not only for

understanding their social perceptions but also for designing educational practices that help them move beyond one-sided or moralistic interpretations of cultural differences. Examining students' perspectives on society and how they give it meaning facilitates the identification of the frameworks and assumptions that contemporary young people use to understand other cultures and groups. This analytical approach can provide a basis for fostering perspectives of other cultures as complex rather than one-sided. This perspective aligns with the emphasis on critical cultural awareness and multiple perspectives in intercultural education (Byram, 1997).

The concept of "discrimination" is an essential perspective when considering relationships with others and groups and has attracted substantial social attention in relation to certain individuals or groups receiving unfair treatment, as research on intergroup relations and social bias has highlighted (Dovidio et al., 2009). However, this concept is often used ambiguously and not clearly distinguished from "distinction." Therefore, the criteria by which people understand and differentiate between "discrimination" and "distinction" must be clarified when examining how differences and fairness are understood in modern society. This understanding is also valuable for intercultural education because it highlights how one's judgments of and actions toward others may be perceived.

Based on these concerns, this study analyzed students' responses to open-ended questions collected at the beginning of a university course to examine how they described society, others, and social differences before receiving formal instruction. This study focused on Japanese students' perceptions of American society to illustrate how they perceive, evaluate, and understand other cultures. Furthermore, it examined how students wrote about social issues, group relations, and cultural differences to identify patterns in their current interpretations that may be significant for planning intercultural discussions, reflections, and instruction.

2. LITERATURE REVIEW

In this section, previous research is reviewed from three perspectives to situate this study: the characteristics of American society, factors related to group formation, and an understanding of discrimination and distinction. Furthermore, this section clarifies why these topics are important in intercultural education. Students do not start from a neutral standpoint when asked to interpret another society. They bring pre-course images, assumptions, and value judgments into the classroom. Thus, the reviewed research describes these three topics and clarifies how students' pre-course written responses can be used as a starting point for teaching. This study also draws on social identity theory as a broad interpretive framework. Previous research has suggested that people often understand society through group categories, belonging, differences, and fairness (Tajfel & Turner, 1979). From this perspective, students' descriptions of American society, explanations of why similar people form groups, and judgments regarding discrimination can be understood as related types of social perceptions rather than separate topics. The literature reviewed below helps position this study as a pedagogically relevant analysis of how students make sense of cultural differences before they receive formal classroom instruction.

2.1 PERCEPTIONS OF AMERICAN SOCIETY

Studies have characterized American society as strongly emphasizing values such as freedom, individualism, and diversity. Hofstede et al. (2010) noted that individualism is a central cultural value in the United States, emphasizing personal autonomy and self-expression. Although these values can promote freedom and diverse ways of life, research has noted that they may contribute to social tension, competition, and conflict. Furthermore, the United States is a highly diverse, multiethnic society shaped by immigration, with cultural and racial diversity as defining features. According to Putnam (2007), social trust and connections may weaken in the short term in highly diverse societies, suggesting that diversity does not automatically lead to social integration or mutual understanding.

Research has indicated that Japanese students may have selective or stereotypical perceptions of American society. Figoni (2011) found that Japanese university students tend to hold simplified or biased views of Americans that overlook the diverse backgrounds, positions, and social contexts in American society. These studies suggest that American society is understood through admired ideals and visible social problems. Being aware of this dichotomy is important for intercultural education because students may enter the classroom with mixed yet incomplete images of the United States, which may influence how they interpret classroom materials, discussions, and comparisons with Japan. Therefore, examining students' pre-course written responses can help identify the ideas with which students are already familiar, and what areas may require further context in the classroom. This concern is consistent with more recent research on intercultural competence in higher education, emphasizing that students often begin coursework with a partial, story-based understanding of other cultures (Figoni, 2011). This issue calls for deliberate pedagogical attention, achieved through structured curricular interventions such as targeted coursework and study abroad, rather than being left to develop on their own (Sierra-Huedo & Nevado-Llopi, 2022).

2.2 COMMONALITY AND GROUP FORMATION

Previous studies have examined why people who share similar backgrounds or values tend to form relationships with each other. Research has shown that such relationships facilitate mutual understanding and provide a sense of psychological safety because shared values and experiences reduce uncertainty and the likelihood of misunderstandings. Brewer (2007) argued that group belonging is important for maintaining self-esteem and a sense of security, suggesting that gathering with similar individuals reflects a natural adaptive response meant to reduce anxiety rather than an intention to exclude others. More recent research incorporating social identity theory has examined how social identity concerns shape group belonging in new educational contexts. Among students in higher distance education, Bick et al. (2024) found that greater social identity threat was associated with a lower sense of belonging and reduced motivation for social interaction with peers. This association was particularly relevant for non-traditional students, such as those with disabilities or a migration background, who reported particularly high levels of social identity threat. These findings suggest that a stable, threat-free sense of social identity remains important for group belonging, even in evolving educational settings such as online and distance learning (Bick et al., 2024). From this perspective, group formation can be understood as a basic strategy for achieving psychological stability in society.

This tendency is particularly evident in intercultural contexts. Ward et al. (2001) demonstrated that forming relationships with people who share their cultural background can reduce anxiety and stress and support cultural adjustment among individuals living in unfamiliar environments. Differences in language, customs, and values can increase uncertainty. Therefore, connections with people from similar cultural backgrounds are often an important source of psychological support. Overall, studies have suggested that group formation in intercultural settings should not be understood only in terms of exclusion or prejudice. Furthermore, it should be examined in relation to safety, belonging, and adaptation. This point is useful in intercultural education because students may initially use everyday terms, such as comfort, ease, or shared understanding, to explain group formation. Identifying these pre-course explanations can enable teachers to design activities that help students transition from personal and psychological explanations to broader discussions regarding how people form groups, distinguish themselves from others, and sometimes exclude those who are perceived as different. Thus, students' responses to open-ended questions reveal what they think and where teaching can begin.

2.3 UNDERSTANDING “DISCRIMINATION” AND “DISTINCTION”

Research has increasingly emphasized the perspective that discrimination is not only a result of individual prejudices or emotions but also produced and maintained within social structures and everyday practices. Dovidio et al. (2009) argued that discrimination is not always overtly hostile or aggressive but can be embedded in judgments, institutional arrangements, and routine behaviors that appear rational or neutral. Feagin (2006) conceptualized racial discrimination as a structural phenomenon shaped by historical and social systems, suggesting that discrimination should not be understood as an exceptional event but as an ongoing societal feature beyond individual intentions or moral judgments.

Studies that distinguish between discrimination and distinction have highlighted the need to consider people's intentions and how others experience their actions. Dovidio et al. (2010) demonstrated that although people may perceive their judgments as rational or justified, others may experience them as exclusionary or causing disadvantages or psychological harm. From this perspective, discrimination is not a one-sided action but a relational process shaped by social context and positional differences. This point is particularly salient in educational settings, in which students often try to determine whether an act is reasonable and necessary or unfair. Teaching discrimination only as an obvious moral wrong may prevent students from developing the language necessary to examine ambiguous cases. Building on these insights, this study examined how Japanese university students understand discrimination and distinction before classroom instruction. Attention is paid to the criteria they use, meanings they assign, and limits of their current methods of reasoning. The educational importance of this focus lies in the potential for pre-course responses to help teachers design tasks that encourage discussion, reflection, and comparison, thereby moving students from simple oppositional viewpoints, such as morally right or wrong or fair or unfair.

2.4 NEEDS ANALYSIS AND PRE-COURSE PERCEPTIONS IN INTERCULTURAL TEACHING

Needs analysis in language and intercultural education generally asks what learners already know, what gaps exist between their current understanding and course goals, and what type of instruction would be most useful given that starting point. According to Brown (2016), needs analysis is the systematic process of gathering and analyzing subjective and objective information about learners. This information is used to define curriculum goals that meet students' language-learning needs within a specific institutional setting. Long (2005) recommended collecting information from multiple sources to obtain reliable and valid results, but cautioned that learners' opinions should be carefully incorporated. The quality of the information obtained can vary depending on how much language-

learning or field-specific experience learners have. However, this step is rarely applied to intercultural teaching about a specific target culture in practice. Course materials on topics such as American society and discrimination are typically built around broad aims, such as raising awareness or correcting stereotypes, without first identifying what students already believe. This creates a risk that lessons repeat ideas students already hold or miss the specific assumptions that actually shape their thinking. Reviewing students' own written descriptions, rather than pre-set survey categories, makes it possible to see this more clearly. This study takes this approach, asking not only what students think but also what their existing views suggest for how a course on American society could be structured.

The concept of a need in this study must be clarified because it differs from how the term is typically used in language needs analysis. Hutchinson and Waters (1987) distinguished among three components of learner need: necessities, which are what a learner must know or do to function in a target situation; lacks, which reflect the gap between current ability and those necessities; and wants, which identify learners' own subjective sense of what they need. This framework was developed primarily to identify linguistic needs, such as the vocabulary or genre conventions required for a specific purpose. Applying this framework to a different type of object, this study applies needs analysis to address not language forms but interpretive frameworks, that is, the categories and assumptions students already use to make sense of another society, group behavior, and fairness. In this reworked framework, necessities correspond to the more contextualized understanding that intercultural instruction aims to build, and wants correspond to students' own sense of what they need to understand about other groups or societies. However, this study focuses on lacks. Here, a lack is conceptualized as the gap between students' current interpretive resources and the more contextualized understanding that intercultural instruction aims to build. For example, explaining discrimination only through individual intent, without considering structural factors, counts as a lack, not because information is missing, but because a way of reasoning is not yet available. Thus, the instruction that follows will be less about supplying missing facts and more about expanding students' interpretive repertoire, as reflected in the pedagogical suggestions in Section 7.

2.5 TECHNOLOGY-ENHANCED APPROACHES TO NEEDS ANALYSIS

A growing body of language and educational research uses computational tools to analyze learner-generated text, situating itself within the broader shift toward learning analytics (Siemens, 2013). In this approach, data produced by learners are used to inform teaching decisions. Text-mining software, such as KH Coder, makes it possible to identify frequent terms and co-occurrence patterns across such open-ended responses, offering a systematic and repeatable alternative to manual thematic coding. KH Coder has recently been used to analyze semi-structured interview data from learners in other educational contexts, such as identifying patterns in how children describe their school adaptation (Li & Araki, 2026). This may suggest that this type of computational approach has some potential to travel across learner populations and topics, although this inference is drawn from a single small-scale case study. Within needs analysis specifically, this type of computational processing can help teachers move from an impressionistic reading of a handful of responses to a more complete, corpus-based picture of what an entire class already believes at a scale that would be difficult to reach manually. Despite this potential, computational text analysis has rarely been applied to needs analysis in intercultural teaching, in which students' pre-course understanding is more often informally inferred or not assessed at all. This study addresses this gap by applying text mining and co-occurrence network analysis to learner-generated responses, demonstrating how a technology-enhanced method can support needs analysis and broader instruction design.

Previous research helps clarify why American society, group formation, and discrimination are meaningful topics in intercultural education. However, a gap remains in the literature regarding how these three themes are studied together and how computational, technology-enhanced methods are used to study them. Earlier studies have discussed these themes separately; however, few have examined how students connect them in pre-course written responses using computational text analysis or how such responses can inform intercultural teaching. This study addresses this gap by analyzing how Japanese university students describe other societies, explain why similar people gather together, and judge the line between distinction and discrimination before receiving formal classroom instruction.

3. RESEARCH QUESTIONS

This study examined how Japanese university students understand society, others, and differences, focusing on their perceptions of American society. Accordingly, the following research questions (RQs) were addressed:

RQ1: What aspects do university students focus on when viewing American society, and how do they discuss these aspects in relation to each other?

RQ2: How do Japanese university students explain the tendency to form groups with others who share similar cultural backgrounds or experiences?

RQ3: How do Japanese university students understand “discrimination” and “distinction,” and how do

they perceive the criteria and social meanings underlying this differentiation?

Across these three RQs, this study also addressed a broader issue: How can students' existing perceptions of a target culture serve as a type of needs analysis for course design in intercultural teaching?

4. THEORETICAL PERSPECTIVE

This study used social identity theory as a framework for reading students' responses to open-ended questions. This theory was not used to measure identity processes directly, but to provide a method for interpreting recurring references to in-groups, out-groups, belonging, threat, fairness, and exclusion in students' written responses. Social identity theory posits how people understand society and others as both individuals and members of social groups (Tajfel & Turner, 1979). From this viewpoint, social perception often involves categorization, comparison, and evaluation across group boundaries. For example, people often feel a sense of familiarity and safety toward others who share their nationality or culture or have similar experiences, whereas they may feel distant from groups that are different from their own. Such differences can sometimes lead to misunderstandings or conflicts.

Regarding RQ1, social identity theory helps explain why students' descriptions of American society repeatedly shifted between valued ideals and perceived divisions, and why social groups emerge as a central unit through which society is conceptualized. For RQ2, this theory provides a foundation for interpreting students' emphasis on safety, ease, belonging, and mutual understanding as aspects of perceived in-group formation rather than simply personal preferences. Regarding RQ3, this theory offers a framework for understanding how students describe discrimination in the context of broader questions related to boundary-making, exclusion, and unequal treatment across group categories.

5. METHOD

5.1 PARTICIPANTS AND DATA COLLECTION

This study surveyed 127 undergraduate students enrolled at two Japanese universities (59 students at University A and 68 at University B). The participants were second- to fourth-year students interested in American society and culture. All participants were enrolled in social science or humanities programs. One of the two universities does not offer science or engineering programs, while at the other university, which does, no students from those programs were enrolled in this particular elective course. Participants had already chosen to enroll in a course on this topic; therefore, their pre-course perceptions may not represent those of students without a prior interest in American society. Data were collected in the first class before students were exposed to course content related to American society and culture when they had limited prior knowledge of the topic. The responses were collected before formal instruction and were thus treated as baseline written data that could elucidate learners' existing perceptions.

The survey comprised open-ended questions inviting students to describe their thoughts and perceptions in their own words. This format was selected to capture how students understand and connect different concepts, which is difficult to identify through predefined response options. The purpose of this study was to identify recurring themes and patterns in students' descriptions of society, group relations, and discrimination, rather than reconstruct complete belief systems from short texts.

Although the survey collected information on gender and academic year, these characteristics were not considered in the analysis, and their distributions are not reported here. This decision reflected two considerations. First, this study aimed to identify social perceptions and narrative patterns shared across the group as a whole rather than to compare individual respondents or subgroups. With 127 respondents spread across two institutions, several subgroup cells would likely have been too small to support stable or meaningful comparisons. Second, reporting a detailed cross-tabulation of gender, academic year, and institution for a sample of this size would risk making individual respondents identifiable. Therefore, this information was withheld to protect participants' privacy. Instead, this study aimed to clarify how widely shared social perceptions and narratives are structured among Japanese university students. The text-mining analysis focused on meaning structures emerging from word frequency and co-occurrence patterns rather than individual attributes. Age and academic major were not collected through the survey. The information on participants' fields of study reported above came from the institutional and course context rather than individual self-reports.

5.2 OPEN-ENDED SURVEY USED TO ADDRESS THE RESEARCH QUESTIONS

Students were asked to respond to three open-ended questions. These were used as prompts to elicit written responses relevant to each of the three research questions (RQ1–RQ3) rather than directly restating them. The survey questions were designed to capture students' social perceptions, understanding of group formation, and views on discrimination from various perspectives.

Open-ended survey questions:

- (1) What types of images or impressions do you have about the United States today? What characteristics do you think American society has?
- (2) Why do people naturally gather with others who share similar cultural backgrounds or experiences?
- (3) When you hear the word “discrimination,” what images or events come to mind? How do you think “discrimination” and “distinction” differ?

5.3 DATA ANALYSIS

All student responses were originally written in Japanese. The text mining analysis was conducted using the original Japanese responses, and English translations are provided only for illustrative quotations. The open-ended response data collected in this study were analyzed using KH Coder, a text-mining software program (Higuchi, 2016, 2017), to identify frequently occurring terms and relationships between words that frequently appeared together. KH Coder was selected because it can process a large set of open-ended responses systematically and consistently, thereby reducing the risk that the resulting patterns simply reflect one reader’s subjective impressions. Furthermore, this program is feasible for a teacher to run before a course begins without specialized programming skills. Morphological analysis (word segmentation and part-of-speech tagging) was performed using KH Coder’s default analyzer and dictionary settings without modification. This analysis focused on recurring lexical patterns in the corpus rather than individual-level differences. The Japanese text was cleaned before the analysis to remove symbols, non-substantive expressions, and words with little analytical value. Only words tagged as nouns, adjectival nouns (na-adjectives), proper nouns, organization names, personal names, place names, adjectives, adverbs, and interjections were retained for analysis. Other parts of speech, such as particles and auxiliary verbs, were excluded. Words that appeared fewer than 15 times in the corpus were excluded from the co-occurrence network, enabling the analysis to focus on sufficiently frequent, and therefore more stable, lexical patterns. No synonym grouping or forced-extraction procedures were applied to merge notational variants or compound expressions. Words were analyzed as segmented using the default morphological analyzer.

Subsequently, co-occurrence network analysis was used as an exploratory tool to visualize the words that tended to appear together within the dataset. The co-occurrence unit was the sentence (KH Coder’s default setting) and the strength of the association between words was measured using the Jaccard coefficient. Only the 60 strongest co-occurrence relationships (edges) were displayed for each set of responses to keep the networks readable. Clusters were identified using KH Coder’s default community-detection procedure, which groups words into subgraphs based on modularity. The number of clusters obtained for each set of responses (five for American society, three for group formation, and five for discrimination and distinction) was generated automatically by this procedure and was not fixed in advance or adjusted manually. After the algorithm produced these subgraphs, the researcher interpretively assigned cluster labels. The characteristic words in each subgraph were read alongside the original student responses from which they were drawn, and a label summarizing the shared theme was assigned on this basis, as illustrated in Section 6. Recurring themes in the data were interpreted based on these clusters. The resulting clusters were cautiously interpreted by comparing the network patterns with the original student responses from which the patterns emerged. Thus, the networks were not treated as self-sufficient evidence, but were examined alongside representative excerpts to prevent overinterpreting simple frequency effects. Accordingly, the analytic procedure illustrates how technology-supported text analysis can be built into routine pre-course needs analysis rather than used only as a research method.

Representative quotations were selected from responses containing each cluster’s characteristic words. When more than one response met this criterion, one was selected at random for illustration. This study was conducted by a single researcher; therefore, cluster interpretation did not involve independent coding by a second researcher. Two additional checks were conducted to support the credibility of the interpretation. First, cluster labels were revisited and re-read after a period of time had passed to check whether the same interpretation held on a second reading. Second, each algorithmically generated word cluster was checked individually against the original responses from which the words were drawn to confirm that the assigned label was consistent with what the students had actually written, rather than relying on the co-occurring words alone.

5.4 ETHICAL CONSIDERATIONS

This study used data collected through a questionnaire administered during a regular class session as part of an ordinary classroom activity rather than through a separate research recruitment procedure. The study was exempt from formal ethics committee review because responses were collected anonymously and used in a manner that did not allow individual students to be identified. The questionnaire included a written explanation at the beginning stating that the responses might be used for research purposes. Students were informed in writing that participation was voluntary, choosing not to respond would have no effect on their course grade, and their

responses would remain anonymous. No identifying information was collected, and the labels used to present illustrative quotations in this article (e.g., Student 1A) were assigned only to distinguish between different students' responses. They do not correspond to any information that could identify a participant. The collected data have been stored as password-protected files and will be discarded in accordance with the author's institutional data-retention policy.

6. RESULTS

Before presenting the clusters, it is worth reiterating that co-occurrence network analysis is an exploratory technique. It shows which words tended to appear together in students' responses, not a direct measurement of students' underlying beliefs or psychological structures. The interpretations offered below describe patterns in how students wrote about each topic and should be read in that light, rather than as evidence of a fully formed or stable conceptual understanding.

6.1 CHARACTERISTICS OF STUDENTS' VIEWS ON AMERICAN SOCIETY

Co-occurrence network analysis using KH Coder revealed that students' open-ended responses could be classified into five distinct clusters, a number generated automatically by KH Coder's modularity-based community-detection procedure rather than set in advance (see Section 5.3) (Figure 1).

The first cluster suggested that students often described American society in terms of liberal values, such as freedom, self-expression, and acceptance of different lifestyles. The co-occurrence network analysis showed that words such as "freedom," "culture," "individual," "opinion," "respect," "coexistence," "ideology," and "strong" frequently appeared together and were strongly interconnected. Students' responses suggested that clearly expressing their ideas and acting based on personal values are key characteristics of American society. Students also referenced the coexistence of people from diverse cultures and backgrounds, indicating that respect for individual freedom is recognized as a foundation that supports a multicultural environment. The following excerpts were translated into English from the original Japanese by the author.

I have the impression that the United States is a multiethnic nation and that it is difficult to live there without a strong sense of self. Within a culture that emphasizes individualism, I feel that there is a contradiction between diversity and individualism. (Student 1A)

The second cluster showed that students often associated multiculturalism with racial discrimination. The co-occurrence network analysis showed that words such as "diversity," "race," "discrimination," and "many" frequently co-occurred and were strongly interconnected. Students' responses indicated that they understood immigration and racial diversity as key positive features of American society. However, they were also aware that such diversity does not necessarily lead to equality or coexistence.

I have an impression of American society as a mix of diverse racial groups and, as a result, I associate it with high levels of crime and discrimination. (Student 1B)

The third cluster suggested that students tended to view gun control and gun-related crime as major social issues that symbolize American society. In the co-occurrence network analysis, the words "guns" and "problems" frequently co-occurred and were strongly interconnected. Students' open-ended responses frequently referenced the legality of gun ownership and media reports on gun-related incidents, suggesting that gun culture is closely linked to feelings of anxiety and danger in everyday American life.

While I associate the United States with freedom, frequent news about gun-related incidents gives me a somewhat frightening impression. Compared to Japan, I also see it as a society where people express their opinions more openly. (Student 1C)

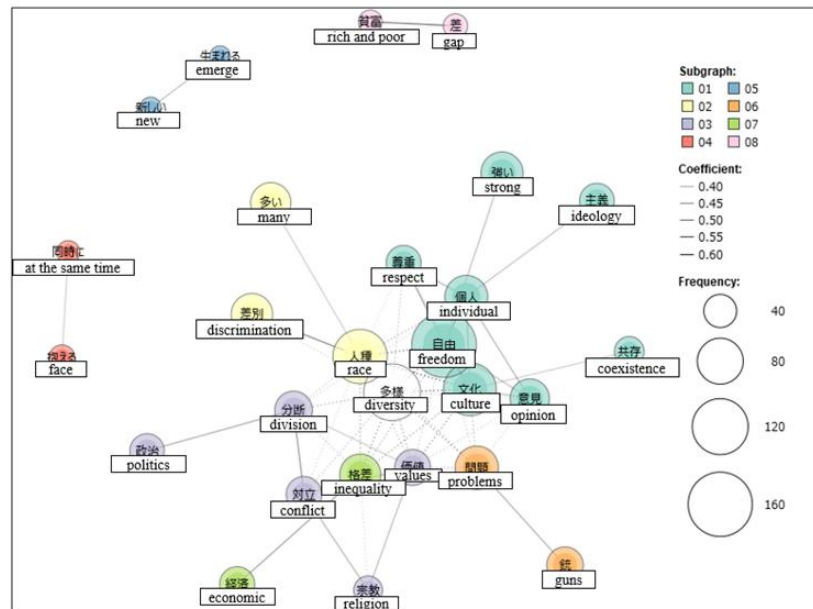


Figure 1: Co-occurrence Network of Students' Views on American Society

The fourth cluster suggested that students described differences in values and interests that lead to political and religious conflicts in American society. The co-occurrence network analysis showed that words such as “division,” “conflict,” “religion,” and “politics” frequently co-occurred and were strongly interconnected. Their responses indicated an awareness that different political positions and religious beliefs can create social division. Although American society guarantees freedom of opinion, students expressed concerns regarding a social structure in which conflict is likely to intensify.

I view the United States as a diverse society, but also one shaped by invisible barriers, such as racial discrimination, poverty, immigration issues, and political division. The coexistence of freedom and equality, as well as diversity and division, characterizes contemporary American society. (Student 1D)

The fifth cluster suggested that students perceived America as an economically wealthy country and a society facing serious inequality. The co-occurrence network analysis showed that words such as “inequality” and “economic” frequently co-occurred and were strongly interconnected. Students’ responses included several references to gaps between the rich and poor and imbalances between social classes, indicating a strong awareness of the coexistence of economic opportunity and structural inequality.

I feel that the United States is a diverse society that strongly values individual freedom, but I also associate it with large gaps between the rich and the poor and a visible homeless population in urban centers. (Student 1E)

This analysis suggested that students' responses reflected multidimensional views of American society. Although freedom, individualism, and diversity emerged as core values, other clusters highlighted social issues, such as racial discrimination, gun violence, political and religious division, and economic inequality.

6.2. COMMON UNDERSTANDINGS AND FACTORS IN GROUP FORMATION AMONG STUDENTS

This section presents the results of analyzing students' responses to the following open-ended question: Why do people naturally tend to gather with others who share similar cultural backgrounds or experiences? Co-occurrence network analysis using the same algorithmic procedure described in Section 5.3, revealed three distinct word clusters (Figure 2). The first cluster indicated that forming groups with people who share similar cultural backgrounds or experiences is intended to achieve psychological comfort and mutual understanding. The co-occurrence network analysis showed that words such as "safety," "values," "self," "understand," and "seeking" frequently co-occurred and were strongly interconnected. Students' responses suggested that shared values and experiences facilitate communication and relationship-building and provide a foundation for stable social ties. In unfamiliar cultural settings or high-anxiety situations, individuals tend to connect with others who are similar to them, suggesting that groups based on shared characteristics are a source of psychological support.

I think people feel a sense of safety when they share even small things in common with others, which

naturally draws them together. In stressful environments, such connections can provide psychological support. (Student 2A)

The second cluster indicated that students viewed forming groups with people who share similar cultural backgrounds or experiences as a way to simplify everyday interactions and reduce psychological burdens. The co-occurrence network analysis showed that words such as “comfort,” “positive,” “conversation,” and “thinking styles” frequently co-occurred and were strongly interconnected. Students’ responses indicated that interacting with people who think similarly and share the same values allows conversations to flow naturally and reduces the need for constant consideration of others. Such relationships were described as “comfortable.” Furthermore, having several things in common was viewed as making it easier to empathize and receive positive responses, thus helping maintain or increase self-esteem.

When I am with people who have ways of thinking or feeling similar to mine, I feel that we can understand each other even without many words, and it feels comfortable ... I feel that conversations are easier to continue with people who share similar ideas or topics, and that these relationships are more likely to deepen. (Student 2B)

The third cluster indicated that students understood forming a group with people who share similar cultural backgrounds or social positions as a process of gaining companions with whom one can share experiences and emotions beyond simple feelings of safety or comfort. The co-occurrence network analysis showed that words such as “others,” “sharing,” “companions,” and “gaining” frequently co-occurred and were strongly interconnected, suggesting that students recognized group formation as a process of acquiring companions with whom one can share experiences and emotions. Students’ responses suggested that connecting with others in similar situations provides psychological stability when facing difficulties or feelings of exclusion and facilitates mutually supportive relationships. The responses also described how discovering shared traits can trigger a sense of belonging and trust. Furthermore, the responses described how students choose individuals who are highly similar to themselves to avoid discrimination, stereotypes, and potential risks.

At the moment when people find something in common, a sense of safety emerges and a feeling of belonging based on shared circumstances becomes stronger ... as an extension of this, I feel that friendships and relationships of trust are often formed. (Student 2C)

Overall, the analysis suggested that students tended to describe group formation with similar others as a layered and gradual process associated with functions such as psychological safety, mutual understanding, and social support, particularly in the context of anxiety or exclusion.

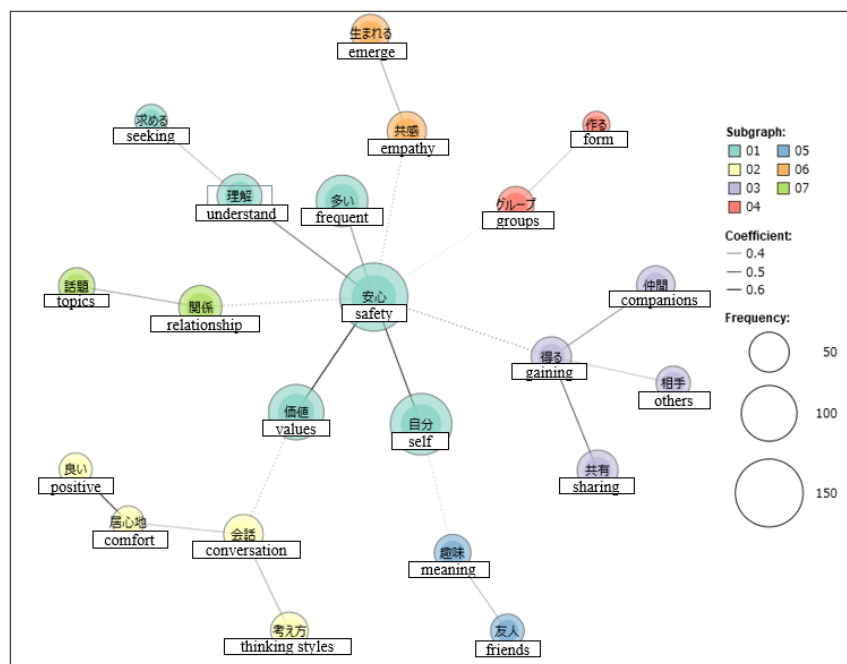


Figure 2: Co-occurrence Network of Students' Views on Group Formation

6.3 STUDENTS' VIEWS ON “DISCRIMINATION” AND “DISTINCTION”

Using the automatic community-detection procedure described in Section 5.3, co-occurrence network analysis identified five distinct word clusters (Figure 3).

The first cluster included words such as prejudice, judgment, values, harm, and dignity, which frequently co-occurred and were strongly interconnected. The co-occurrence network analysis showed that words such as “prejudice,” “judgment,” “values,” “harm,” and “dignity” frequently co-occurred and were strongly interconnected. The students’ open-ended responses clearly distinguished between distinction and discrimination. They described distinction as a neutral and sometimes necessary judgment based on the recognition of differences. In contrast, they held negative views of discrimination, conceptualizing it as unfair treatment based on differences. Students viewed the key criterion separating them as whether a judgment or value assessment is based on valid reasons. Furthermore, they commonly perceived discrimination as an act of exclusion based on prejudice or ill intent, in which others are judged unfairly and their dignity is damaged. Students also indicated that assigning superiority or inferiority based on attributes that cannot be changed through personal effort, such as race or place of origin, constitutes discrimination.

Distinction means recognizing differences between things ... In contrast, I think discrimination means treating people unfairly because of those differences ... I feel that distinction is necessary, but discrimination is something that should be eliminated. (Student 3A)

Discrimination feels like excluding people based on ill will or prejudice ... boundaries made for safety or consideration are distinction, but limiting opportunities based on skin color or place of origin is discrimination. (Student 3B)

The second cluster showed that students understood discrimination not only as a matter of personal feelings or prejudice but also as actions that socially exclude and disadvantage others. The co-occurrence network analysis results demonstrated that words such as “action,” “understand,” “exclusion,” “others,” and “society” frequently co-occurred and were strongly interconnected. Students’ responses suggested that they viewed discrimination as unfair behavior that fails to respect others and prioritizes one’s own position or interests at the expense of someone else. They understood discrimination not only as a problem related to values but also as a set of practices that manifest through concrete actions in society. Furthermore, they described discrimination as an act that denies others’ identity and causes psychological harm, often involving ill intent or contempt. Students also viewed discrimination as a social problem that takes several forms, including discrimination based on race, socioeconomic status, and family background.

I think discrimination is an act that looks down on another person’s identity and causes discomfort or emotional harm ... When contempt or a lack of respect is added, distinction can turn into discrimination. (Student 3C)

The third cluster showed that students prioritized unfairness over rationality and necessity when distinguishing between discrimination and distinction. The co-occurrence network analysis results demonstrated that words such as “unfair,” “race,” “gender,” “necessity,” “rationality,” “separating,” and “receiving” frequently co-occurred and were strongly interconnected. Students’ responses suggested that they conceptualized discrimination as unfair treatment based on attributes that cannot be changed through personal effort, such as race, gender, or place of origin. In contrast, they viewed distinction positively as a rational and necessary form of classification based on factors such as safety or physical characteristics.

They further noted that distinctions related to gender or disability may be perceived as discriminatory, depending on the situation and perspectives of those affected.

I think that discrimination involves unfair treatment of people in weaker positions without reasonable justification, whereas distinction is based on rational and objective reasons. However, in cases such as gender or disability, distinction can risk turning into discrimination, depending on how it is applied or perceived. (Student 3D)

When I hear the word “discrimination,” I think of racial discrimination ... I believe discrimination means restricting or excluding people without a justified reason or basis ... even distinction can feel unpleasant to the person involved, so I think it needs to be considered carefully. (Student 3E)

The fourth cluster demonstrated that students understood discrimination as treating people as a single entity simply because they belong to a particular group. The co-occurrence network analysis showed that words such as

“specific,” “groups,” and “individuals” frequently co-occurred and were strongly interconnected. These responses suggested that discrimination is often associated with historical cases involving groups such as Black and Asian people, and they viewed it as a structural problem reproduced at the group level. When differentiating between discrimination and distinction, students considered a situation discriminatory when one side is clearly prioritized over the other. Furthermore, students understood that the concept of discrimination is unclear and judgments can be difficult to make in modern society. Actions can be viewed as discriminatory, even if that is not the intention. Students' responses also suggested that although discrimination targets groups, its effects were often described as falling on individuals in psychological and physical terms.

I think that “discrimination” is an abstract and difficult concept. While hostile attacks on specific groups are clearly discriminatory, even non-hostile statements can be perceived as discrimination, making the boundary between discrimination and distinction unclear. (Student 3F)

The fifth cluster suggested that students emphasized the appropriateness of ability evaluation and maintenance of fairness when differentiating between discrimination and distinction. The co-occurrence network analysis showed that words such as “age,” “unfairness,” and “ability” frequently co-occurred and were strongly interconnected. Students commonly described discrimination as actions that result in disadvantages or exclusion based on attributes that people cannot choose to change. In contrast, classifications based on age or ability were viewed positively as rational judgments made to ensure fairness. Students also recognized that discrimination is rooted in structural inequalities based on factors such as gender.

I think discrimination means excluding or disadvantaging people based on unchangeable factors, such as race or place of origin, whereas distinction depends on reasonable and justified criteria. For example, separating people by gender or weight in competitions may ensure fairness, but refusing employment based on race is discrimination. (Student 3G)

Overall, this analysis suggested that students' responses described discrimination in terms of a broad and context-dependent phenomenon, extending beyond personal prejudice to include unfair judgments and social exclusion. Although several students distinguished between discrimination and distinction based on rationality and fairness, they also recognized that rational judgments may be experienced as discriminatory depending on social context and positionality.

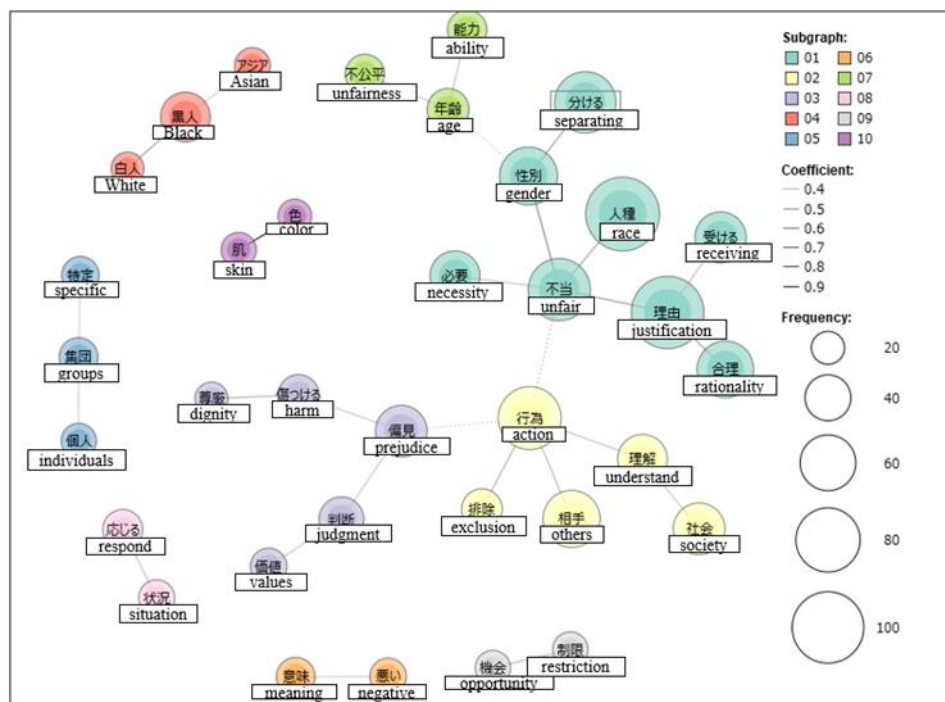


Figure 3: Co-occurrence Network of Students' Views on Discrimination and Distinction

7. DISCUSSION

This study showed that rather than being based on a single fixed image, Japanese university students' views on other cultures are layered and reflect an awareness of group differences and social relationships. These features

of students' perceptions have important implications for intercultural education, particularly when considering how people understand multicultural societies and engage with others and differences.

7.1 STUDENTS' VIEWS OF AMERICAN SOCIETY (RQ1)

The analysis of RQ1 suggested that Japanese university students tended to describe American society positively in terms of values such as freedom, individualism, and diversity. However, they also recognized that these ideals do not always lead to equality, safety, or social stability. This suggests that the students did not idealize American society but understood it as having multiple and sometimes conflicting aspects. These findings align with previous research describing the United States as a society that emphasizes individualism. Although it can support personal freedom, this emphasis also contributes to social division and makes it difficult to achieve a consensus (Hofstede et al., 2010). Students also referenced issues such as racial discrimination, political and religious conflict, economic inequality, and gun-related violence, which is consistent with a view of the United States as a multicultural and structurally complex society in which valued ideals and social challenges coexist.

These findings suggest that several students entered the course with layered and occasionally internally conflicting descriptions of American society that were neither entirely idealized nor negative. From an educational perspective, this indicates that teachers should not assume ignorance or fixed stereotyping to be the starting point. Instead, classroom work should begin by addressing the mixed and uneven ways in which students already perceive other societies. This can help students examine how ideals such as freedom and diversity become linked to danger, division, or inequality in their thinking. In practical terms, these pre-course perceptions can inform the design of discussion prompts, comparative tasks, and reflective writing activities aimed at moving students from impression-based descriptions toward more contextualized social analysis.

Given that students had already connected “freedom” and “individualism” with social division and inequality (Clusters 1 and 2), one possible instructional strategy would be for the first class to treat this tension as a starting point rather than new information. Specifically, the class could begin with an example such as the debate over gun policy or racial disparities in housing and ask students why a society based on individual freedom produces these issues.

7.2 UNDERSTANDING GROUP FORMATION (RQ2)

The analysis of RQ2 suggests that Japanese university students view group formation with individuals who share similar cultural backgrounds or experiences as a gradual social process rather than simply a matter of personal preference. Their responses suggest that they consider group formation a means of gaining psychological safety and mutual understanding that can develop into stable relationships characterized by comfort and shared experiences and emotions. This concept aligns with social identity theory, which posits that belonging to an in-group fosters a sense of safety and self-esteem (Tajfel & Turner, 1979). In this study, students emphasized feeling understood and secure when interacting with similar others, reflecting the psychological stability associated with in-group belonging.

These findings suggest that students perceive group formation as an important social practice that encompasses psychological and social dimensions. In terms of intercultural education, these responses suggest that students may initially interpret group formation through the language of comfort and safety rather than through that of prejudice. This is pedagogically important because classroom discussions regarding in-groups and out-groups can easily become moralized. If educators begin only with the claim that gathering with similar others is exclusionary, students may respond defensively. A more productive approach may be to start from students' own recognition of safety, belonging, and anxiety, and then examine when such tendencies remain adaptive or begin to turn into exclusion.

Given that the students already understand group formation as a search for psychological safety and comfort rather than an act of exclusion, one possible instructional strategy would be for the first class to begin with an exercise in which students write in their own words why people feel more comfortable with others from similar backgrounds. The terms “in-group” and “exclusion” could then be introduced once students have expressed the idea in their own words.

7.3 STUDENTS' UNDERSTANDING OF DISCRIMINATION AND DISTINCTION (RQ3)

The analysis of RQ3 indicated that Japanese university students view discrimination as social actions that harm dignity and create disadvantages through unfair judgments rather than as personal prejudice or negative feelings. Several students distinguished discrimination from distinction by emphasizing rationality, legitimacy, and fairness. These views align with the argument that discrimination becomes problematic when disadvantages are imposed without reasonable grounds (Pager & Shepherd, 2008). Furthermore, students' responses suggested that they

recognized that judgments perceived as rational may be experienced as discrimination depending on the position of those affected and surrounding social context. This understanding reflects the perspective of discrimination as a relational and context-dependent process rather than a one-sided act based solely on intent.

These findings suggest that students perceived discrimination as a complex and multifaceted phenomenon shaped by intergroup relations, social structures, and lived experiences. From an intercultural educational perspective, these findings indicate the importance of moving beyond teaching discrimination as a simple moral issue of right versus wrong. From an educational standpoint, this highlights the need for teachers to help students distinguish between intention, justification, and impact. Several responses showed that despite attempting to differentiate between “reasonable distinction” and “unfair discrimination,” students lacked the language to examine how context, power, and the standpoint of the affected person complicate that distinction. This underscores the importance of learning activities that encourage students to consider how a judgment appears to the actor and may be experienced by those subject to it.

Students were found to already use fairness and reasonableness as their criteria for distinguishing discrimination from distinction (Clusters 3 and 5); therefore, the first class could begin with a borderline case from the survey, such as categorizing competitors by gender or age. Students could then be invited to argue both sides before academic definitions of discrimination are introduced.

7.4 IMPLICATIONS FOR TECHNOLOGY-ENHANCED NEEDS ANALYSIS AND INSTRUCTIONAL DESIGN

Beyond the specific findings for RQ1–RQ3, this study has broader implications for how technology can support instructional design in intercultural education. Collecting open-ended responses through a simple digital survey and processing them with KH Coder made it possible to identify recurring patterns across 127 responses within a short period without extensive manual coding. This type of procedure could be repeated at the start of every course offering, producing a cluster-based picture of what a specific group of students already thinks that a teacher could use directly when planning the first few lessons, as illustrated in Sections 7.1–7.3. Viewed this way, the text-mining approach used here works less as a one-time research technique and more as a model for a low-cost, technology-enhanced needs-analysis tool that teachers without a background in computational methods could realistically adopt, given that KH Coder is freely available and does not require programming skills. This positions computational analysis of learner-generated data as a practical resource for learning analytics in language and intercultural classrooms, rather than only an academic research method.

8. LIMITATIONS

This study had several limitations. First, the participants were enrolled in a course related to American society and culture at two Japanese universities. Therefore, the findings should not be generalized to all Japanese university students. Second, the data comprised relatively short written responses to open-ended questions collected before instruction at one point in time. Thus, the analysis only identified recurring descriptive patterns in students’ writing without capturing the full depth, stability, or development of individual views. Consistent with Long’s (2005) recommendation to draw on multiple sources of information, this study relied on a single method of data collection at one point in time. Future needs analyses could combine this approach with other sources, such as interviews or classroom observation, to obtain a more complete picture of students’ perceptions. Third, although gender and academic year were collected, subgroup differences were not examined, and their detailed distributions were not reported to protect participants’ privacy given the sample size. Information on age and academic major was not collected. Consequently, this study cannot address whether the identified patterns vary across these characteristics. Fourth, this study was conducted by a single researcher; therefore, the interpretation of clusters and selection of illustrative quotations did not involve an independent second coder, and no formal inter-rater reliability statistic could be calculated. The two checks described in Section 5.3, namely, revisiting cluster labels after a time interval and comparing each word cluster individually against the original responses, were used to support the credibility of the interpretation. However, they cannot fully substitute for independent coding by more than one researcher. Future studies could strengthen this process by involving multiple coders or incorporating member-checking with participants. Finally, co-occurrence network analysis was used as an exploratory method to identify patterned associations in the data. Thus, these findings should not be taken as direct evidence of fully formed psychological structures.

9. CONCLUSION

This study suggests that students’ existing perceptions before a course begins provide a useful starting point for intercultural education. Analyzing students’ narratives reveals that their understanding of other cultures and societies does not stem from fixed images or simple moral judgments, but from the interaction of multiple factors, including anxiety, safety needs, social positioning, and broader social contexts. Instead of assuming that

intercultural education is mainly about transmitting desirable values, the findings of this study suggest the importance of first identifying the ambiguities, tensions, and partial understandings that students bring to the classroom.

Students' views on group formation and discrimination suggest that behaviors often interpreted as exclusionary or prejudiced may also serve as adaptive responses to psychological and situational demands. From an educational perspective, this highlights the importance of approaches that encourage learners to consider social distance and intercultural friction relationally and contextually, rather than in simple terms of right or wrong. When these perceptions are brought to light, they can provide materials for teaching comparison, dialogue, reflection, and reinterpretation. This study contributes to the literature by bringing together students' descriptions of American society, group formation, and discrimination, and examining how these themes appear in the same set of responses. These descriptions reveal how students shift between describing cultural features, explaining behavior in psychological terms, and evaluating fairness. Thus, this study's contributions lie less in offering a definitive account of students' beliefs than in demonstrating how their pre-instruction descriptions can inform the design of more reflective and context-sensitive intercultural learning.

Accordingly, this study provides an example of a technology-enhanced needs analysis in intercultural education. Rather than assuming what students need to learn, this study starts from what students already know and shows how computational text analysis can transform their own words into materials that directly inform instructional design. This approach, which uses open-ended pre-course questions analyzed through text mining to assess students' existing knowledge, could be applied to other intercultural courses at low cost. Although this study was conducted in a Japanese university setting, the approach can be adapted to other contexts in which students have preconceived notions about a target culture before instruction begins.

References

- Bennett, J. M. (1993). Toward ethnorelativism: A developmental model of intercultural sensitivity. In R. M. Paige (Ed.), *Education for the intercultural experience* (pp. 21–71). Yarmouth, ME: Intercultural Press.
- Bick, N., Froehlich, L., Voltmer, J.-B., Raimann, J., Reich-Stiebert, N., Seidel, N., Burchart, M., Martiny, S.E., Nikitin, J., Stürmer, S. & Martin, A. (2024). Virtually isolated: Social identity threat predicts social approach motivation via sense of belonging in computer-supported collaborative learning. *Frontiers in Psychology*, 15, Article 1346503. <https://doi.org/10.3389/fpsyg.2024.1346503>
- Brewer, M. B. (2007). The importance of being we: Human nature and intergroup relations. *American Psychologist*, 62(8), 728–738. <https://doi.org/10.1037/0003-066X.62.8.728>
- Brown, J. D. (2016). *Introducing needs analysis and English for specific purposes*. New York: Routledge.
- Bruner, J. (1996). *The culture of education*. Cambridge, MA: Harvard University Press.
- Byram, M. (1997). *Teaching and assessing intercultural communicative competence*. Clevedon, UK: Multilingual Matters.
- Dovidio J. F., Gaertner S. L., & Saguy T. (2009). Commonality and the complexity of “we”: Social attitudes and social change. *Personality and Social Psychology Review*, 13(1), 3–20. <https://doi.org/10.1177/1088868308326751>
- Dovidio, J. F., Gluszek, A., John, M.S., Dittmann, R., & Lagunes, P. (2010). Understanding bias toward Latinos: Discrimination, dimensions of difference, and experience of exclusion. *Journal of Social Issues*, 66(1), 59–78. <https://doi.org/10.1111/j.1540-4560.2009.01633.x>
- Essed, P. (1991). *Understanding everyday racism: An interdisciplinary theory*. Sage Publications. <https://doi.org/10.4135/9781483345239>
- Feagin, J. R. (2006). *Systemic racism: A theory of oppression*. Routledge. <https://doi.org/10.4324/9781315880938>
- Figoni, K. (2011). An attempt and proposal for intercultural understanding education to change students' attitudes: Toward the reduction of stereotypes [Gakusei no ishiki wo kaeru ibunnkarikaikyoku no kokoromi to teian: Stereotype kaisho ni mukete]. *Mukogawa Literary Review*, 47, 75–91. (in Japanese)
- Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learning-centred approach*. Cambridge University Press. <https://doi.org/10.1017/cbo9780511733031>
- Higuchi, K. (2016). A two-step approach to quantitative content analysis: KH coder tutorial using Anne of Green Gables (part I). *Ritsumeikan Social Science Review*, 52(3), 77–91. <http://www.ritsumei.ac.jp/file.jsp?id=325881>
- Higuchi, K. (2017). A two-step approach to quantitative content analysis: KH coder tutorial using Anne of Green Gables (part II). *Ritsumeikan Social Science Review*, 53(1), 137–147. <http://www.ritsumei.ac.jp/file.jsp?id=346128>
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind: Intercultural cooperation and its importance for survival* (3rd ed). McGraw-Hill.

- Li, S., & Araki, Y. (2026). Text mining analysis of school adaptation among Chinese children living in Japan. *Frontiers in Education Language, Culture and Diversity*, 11, Article 1720904. <https://doi.org/10.3389/feduc.2026.1720904>
- Long, M. H. (2005). *Second language needs analysis*. Cambridge: Cambridge University Press.
- Pager, D., & Shepherd, H. (2008). The sociology of discrimination: Racial discrimination in employment, housing, credit, and consumer markets. *Annual Review of Sociology*, 34, 181–209. <https://doi.org/10.1146/annurev.soc.33.040406.131740>
- Putnam, R. (2007). E pluribus unum: Diversity and community in the twenty-first century. *Scandinavian Political Studies*, 30, 137–174. <https://doi.org/10.1111/j.1467-9477.2007.00176.x>
- Siemens, G. (2013). Learning analytics: The emergence of a discipline. *American Behavioral Scientist*, 57, 1380–1400. <https://doi.org/10.1177/0002764213498851>
- Sierra-Huedo, M. L., & Nevado-Llopis, A. (2022). Promoting the development of intercultural competence in higher education through intercultural learning interventions. *Revista Electrónica Educare*, 26(2), 1–21. <https://doi.org/10.15359/ree.26-2.28>
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–48). Brooks/Cole.
- Ward, C., Bochner, S., & Furnham, A. (2001). *The psychology of culture shock*. Routledge.