Journal of Curriculum Studies Research

https://curriculumstudies.org

E-ISSN: 2690-2788

Volume: 7 Issue: 1 2025

pp. 47-65

Cultural Empathy and School Climate in Kazakhstan: A Factor and Cluster Analysis of Students' Perceptions

Saule Yussupova[a] & Bulent Tarman[*b]

* Corresponding author
Email: b.tarman@turan-edu.kz
a. Department of Regional Studies and International Relations, Turan University, Almaty, Kazakhstan
b. Department of Research and Innovation, Turan University, Almaty, Kazakhstan

Article Info
Received: November 21, 2024
Accepted: January 28, 2025
Published: March 4, 2025

10.46303/jcsr.2025.3

How to cite
Yussupova, S., & Tarman, B. (2025). Cultural Empathy and School Climate in Kazakhstan: A Factor and Cluster Analysis of Students' Perceptions. *Journal of Curriculum Studies Research*, 7(1), 47-65. https://doi.org/10.46303/jcsr.2025.3

ABSTRACT
This study aims to examine student perceptions of school climate in Kazakhstan by adapting the "School Climate for Diversity – College" scale to a new cultural context. A mixed-methods approach was adopted to ensure both linguistic and psychometric validity of the adapted scale. Qualitative analysis evaluated linguistic and contextual relevance, while quantitative methods assessed reliability, factor structure, and measurement accuracy using exploratory and confirmatory factor analysis. The study involved 718 students from selected provinces, predominantly female (73.1%), with an average age of 18.9 years (SD = 2.23). Statistical tests, including the Kaiser-Meyer-Olkin measure and Bartlett's test of sphericity, confirmed the dataset's suitability for factor analysis. Exploratory factor analysis revealed a six-factor structure, highlighting "Interaction," "Promotion of Cultural Competence," and "Cultural Socialization" as key factors. Cluster analysis identified four distinct student groups with varied perceptions of school climate. The study findings reveal the multidimensional nature of school climate perceptions in Kazakhstan, identifying opportunities for improvement in cultural socialization and stereotyping reduction. The adapted scale was found to be reliable and valid, offering valuable insights into students' diverse experiences in the region.

KEYWORDS
School climate; Kazakhstan; cultural empathy; scale.

INTRODUCTION

Creating an inclusive and supportive school climate that embraces diversity is crucial for promoting academic success and the overall well-being of all students (Thapa et al., 2013). The "School Climate for Diversity–Secondary" instrument, developed by Byrd (2017), provides a comprehensive framework for evaluating how effectively secondary schools promote an environment that values and respects diversity across dimensions such as race, ethnicity, gender, socioeconomic status, and ability levels.

While this instrument has been validated and widely used in the United States, its cultural relevance and applicability in Kazakhstan remain unexplored. Kazakhstan, a multicultural nation with a population representing over 130 ethnic groups (Abdullina, 2013), presents a unique educational landscape affected by its historical, cultural, and socio-political context (Yakavets, 2014). Adapting and validating this instrument for Kazakhstani secondary schools could provide valuable insights into the country's educational environment and support strategies to promote inclusivity and diversity in school communities.

This study aims to adapt the "School Climate for Diversity–Secondary" instrument to the Kazakhstani context through a rigorous process of translation, cultural adaptation, and psychometric validation. By engaging key stakeholders, including educators, students, and diversity and inclusion experts, the study seeks to ensure that the adapted instrument effectively reflects the unique dynamics of diversity and inclusivity in Kazakhstani secondary schools (Beaton et al., 2000; Epstein et al., 2015).

The successful adaptation of this instrument would equip Kazakhstani educational institutions with a reliable and culturally relevant tool to evaluate their school climate for diversity. This tool could guide data-driven decisions and interventions to foster inclusive learning environments, promote mutual understanding and respect, and enhance the educational experiences and outcomes of all students, irrespective of their backgrounds or characteristics (Byrd, 2017; Thapa et al., 2013).

LITERATURE REVIEW

Educators widely agree that effective teaching requires both subject expertise and the ability to engage diverse student populations (Carothers et al., 2021; Japar et al., 2023; Steyn & Vanyoro, 2023). As Howard (2006) stated, "We can’t teach what we don’t know," highlighting the need to understand both subject matter and students' cultural backgrounds. Unfortunately, several teachers remain underprepared to teach students from diverse ethnic backgrounds, as some educational programs are reluctant to fully embrace multicultural education despite increasing school diversity and persistent achievement gaps among students of color. However, programs that integrate multicultural education acknowledge that understanding cultural diversity is essential for addressing the needs of these students (Assyltayeva et al., 2024; Kilinc et al., 2023; Yussupova et al., 2023).

Culturally responsive teaching highlights the importance of understanding the cultural values, communication styles, learning preferences, and contributions of different ethnic groups (Hollins et al., 1994; Pai, 1990; Smith, 1998). For example, teachers need to recognize how communal living and cooperative learning preferences affect students' motivation and performance. Such cultural nuances are critical for promoting equity in the classroom, particularly regarding gender roles and child-adult interactions across different ethnic groups.

Teachers must move beyond general awareness of cultural diversity to gain in-depth knowledge about specific ethnic groups, making education more relevant and engaging for diverse learners. Unfortunately, many educators perceive cultural diversity as incompatible with subjects like math and science, though research contradicts this belief (Banks & Banks, 1995). For example, Gutstein (2003) showed how Latino students used real-life data, such as traffic stop statistics, to analyze racial profiling, thereby deepening their understanding of mathematical concepts and increasing their engagement with the subject.

Culturally relevant teaching improves academic engagement and achievement while fostering critical consciousness in students. Research shows that students engaged in culturally relevant curricula develop a deeper understanding of societal biases (Epstein, 2015). For instance, in a middle school science class, students discussed scientific bias and its connections to broader social biases (Laughter & Adams, 2012).

Terrell et al. (2023) examine the multi-dimensional nature of student perceptions of school climate at the individual level, contrasting this with a uni-dimensional perspective at the school level. Using data from the Georgia Student Health Survey for middle and high school students, the study findings reveal that while students perceive school climate through various dimensions, schools tend to present these perceptions in a more singular way. Notably, the study finds a strong association between administrator-reported school climate and behavioral data, highlighting the validity of student perceptions as indicators of school climate. This research emphasizes the need for a comprehensive approach to measuring school climate, advocating for the integration of student insights as an essential component of school capacity (Terrell et al., 2023).

Additionally, culturally relevant teaching and school racial socialization support the development of a positive ethnic-racial identity while fostering positive attitudes toward others. For example, African American girls participating in a culturally relevant after-school program showed higher levels of ethnic-racial identity and stronger commitments to activism compared to a control group (Thomas et al., 2008). Similarly, these approaches have been shown to empathy and understanding across diverse racial and ethnic groups (Aldana et al., 2012).

Claiborne and Dixson (2024) examine the relationship between psychosocial factors and school climate in a racially stratified sample of high school students in the United States, focusing on students from minoritized backgrounds. The study examines five key psychosocial factors—motivation, academic self-concept, goal valuation, attitudes toward teachers, and attitudes toward school—and their impact on students' perceptions of school climate across

racial groups. Data from a school-administered survey of 2,524 students revealed that all five factors significantly predict positive perceptions of school climate, with medium to large effect sizes. Attitudes toward teachers emerged as the strongest predictor. Moreover, the combination of psychosocial factors affecting school climate perceptions varied across racial groups. These findings highlight the importance of understanding psychosocial dynamics in improving school climate and emphasize the critical roles of teachers and racial considerations in fostering a supportive educational environment (Claiborne & Dixson, 2024).

Studies at the secondary school level provide strong evidence that a positive school climate enhances students' health, well-being, and cognitive development (Aldridge & Blackstock, 2024). Such research underscores the critical role of school climate and regulatory flexibility in affecting mental health outcomes, particularly in relation to stress. A supportive school environment, combined with the ability to adapt to regulatory frameworks, is important in moderating depressive symptoms following stress exposure. A positive school climate fosters emotional well-being by providing a sense of security and belonging, mitigating the effects of stressful events. Similarly, regulatory flexibility—the ability to adapt to institutional rules and expectations—buffers individuals against the emotional toll of stress, enabling more effective coping mechanisms (Nizri et al., 2024).

For more comprehensive reviews on the impact of culturally relevant teaching and racial socialization in schools, see Aronson and Laughter (2016), Aldana et al. (2012), Byrd (2014), and Morrison and Robbins (2008). These studies consistently demonstrate that culturally responsive teaching strategies enhance academic performance while fostering critical thinking and social engagement among students from diverse backgrounds.

Research in Kazakhstan, as highlighted by Winter et al. (2022), shows that social influences—particularly from teachers, peers, and parents—play a significant role in shaping perceptions of school climate. Teachers are identified as the most influential figures, followed by peers, while parental influence shows certain limitations. The study also reveals a gender disparity in school climate perceptions, with females reporting higher levels of engagement than males. This aligns with global trends showing males are more likely to exhibit behavioral issues and lower compliance with school expectations. In Kazakhstan, while no significant behavioral differences exist between young males and females, males express less confidence in the value of education and higher learning. Females also outnumber males in higher education enrollment, accounting for 53.4% of the student population. These findings raise important questions about the cognitive engagement of young males in Kazakhstan, emphasizing the need for further research to uncover the causes of this gender gap and develop targeted interventions.

In Kazakhstan, an essential aspect of school climate is the coexistence of two official languages: Kazakh and Russian. Research by Nam in the study "Medium of Instruction, National Identity and Attitudes Towards Gender Roles in Kazakhstan" reported significant differences between students studying in these languages. Students learning in Kazakh showed higher

language proficiency, a stronger sense of national identity, and more traditional views on gender roles compared to those studying in Russian (Nam, 2023). Karimova et al. (2024) examine the development of cross-cultural competence within Kazakhstan's educational landscape, highlighting the importance of linguistic and cultural diversity in fostering intercultural sensitivity and dialogue. Their research examines how cultural diversity intersects with educational practices, outlining strategies for integrating intercultural competence into the education system. By analyzing socio-cultural dynamics and educational initiatives, the authors provide valuable insights into cultivating intercultural competence among students, equipping them with essential skills to thrive in an increasingly interconnected global environment.

Zakiah et al. (2024) highlight the effectiveness of a multicultural education lesson plan implemented for fourth-grade elementary students in Indonesia, focusing on the theme of diversity and the Minang community in West Sumatra. Their findings underscore the importance of teaching multicultural values to promote understanding of ethnic diversity among young learners. This approach provides a valuable model for Kazakhstan, a nation with over 130 ethnic groups, suggesting that similar initiatives in civic education could enhance social cohesion and foster greater appreciation for cultural diversity in the country (Zakiah et al., 2024).

METHODS

This study, aimed at adapting an established scale to a new environment, employed a mixed-method approach for comprehensive validation. It integrated qualitative analysis to ensure linguistic validity with quantitative methods to examine the scale's psychometric properties. Statistical tests on data from a representative sample assessed reliability, factor structure, and measurement accuracy. This combination of qualitative and quantitative techniques established a strong foundation for the scale's adaptation, ensuring both linguistic appropriateness and statistical reliability in the new context.

Sample

The survey was conducted among university students in Almaty, Kazakhstan, with a total of 716 respondents. Of the participants, 73.1% were female, and 26.9% were male. The average age of the participants was 18.9 years (SD = 2.23).

Data collection tool

The "School Climate for Diversity–College" scale, developed by Byrd (2017), was used as the data collection tool. The original scale comprises 10 dimensions and 37 items, with validity and reliability studies already completed. For its adaptation, language validity was first established, followed by other psychometric evaluations. As the original scale is in English, the survey was translated into Russian to accommodate students in Almaty, where many, including those from Kazakh ethnic groups, are proficient in Russian. To ensure translation accuracy, two experts reviewed the initial translation, and two additional experts skilled in both Russian and English, with experience in social science research, validated it. Certain terms, like "racism," posed

challenges due to their infrequent usage in Kazakhstan, where concepts like "nationalism" resonate more with the local context. Many Kazakh students misunderstand or find the concept of racism irrelevant, reflecting the country's limited racial diversity despite its multiethnic population of over 130 groups. This lack of visibility contributes to a perception that racism is not an important issue in Kazakhstan. Historical influences, particularly during the Soviet era, further complicate the interpretation of Western terms. Only in recent decades has Kazakhstan begun incorporating modern terminology, creating challenges not only for this study but also for broader initiatives, such as the "Ethno-Political Terms and Concepts" lexicon project in 2014. Project Director Aygul Sadvakasova noted that transitioning from Soviet scientific frameworks to modern terminology has significantly altered the understanding of key concepts (Temirbayeva, 2024).

As a result, some Western terminology remains misunderstood or insufficiently integrated into the local lexicon (Tuymebaev et al., 2020). Changes in language, including the replacement or omission of certain terms, have made adaptation challenging for residents. For example, Ahmet Muradov, Chairman of the Association for the Advancement of Chechen and Ingush Peoples in Kazakhstan and a member of parliament, noted that many terms in the ethnopolitical lexicon were unfamiliar to him. Concepts he previously understood had acquired new or different meanings. For example, "nationality," which referred to ethnic origin in Soviet documents, now carries negative connotations, while internationally accepted terms like "ethnic minorities" are not officially recognized in Kazakhstan. As a result, some terms and ideas from the original scale required additional explanation, leading to longer and more detailed Russian versions compared to the English original. The authors also simplified certain terminology to ensure accessibility, as some terms are not commonly used in everyday Russian. A pilot study with 50 students was conducted to test their understanding of the survey questions and gauge their reactions. The authors verified that students comprehended the Russian text correctly by reviewing their answers for accuracy. During data collection, the authors engaged with students in the classroom, answering their questions. The survey questions were well-understood, and the data was collected successfully.

Data Analysis

The data from the primary cohort was meticulously processed to address any incomplete information and then randomly divided into two groups: one for Exploratory Factor Analysis (EFA) and the other for Confirmatory Factor Analysis (CFA). EFA was conducted using Maximum Likelihood extraction with Varimax rotation, based on literature suggesting factor interconnectedness. CFA was subsequently performed to validate the factor structure identified in EFA, following established methodologies. Fit indices from CFA confirmed the validity of the factor structure.

The analysis included evaluations of factor loadings, covariances, and fit indices such as CFI, TLI, RMSEA, and SRMR, using recognized benchmarks for acceptability. Reliability was measured with Cronbach's alpha and McDonald's omega. Jamovi software was used for EFA,

CFA, and reliability assessments. Additionally, the study analyzed overall participant perceptions and employed cluster analysis to identify subgroups within the sample.

FINDINGS

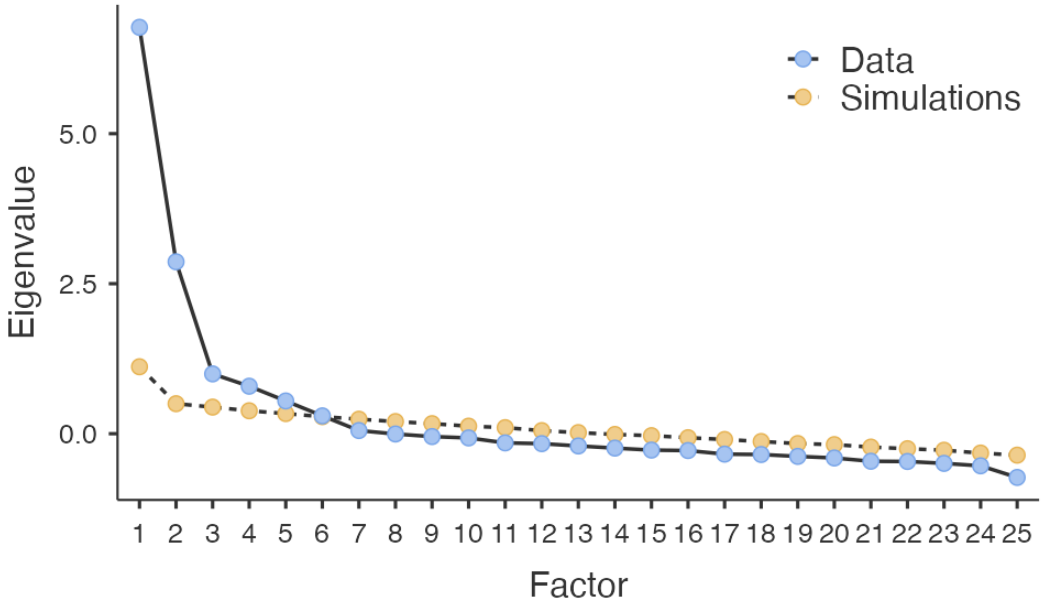
1- Exploratory Factor Analysis

Before conducting EFA, the dataset's adequacy was thoroughly assessed using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity. The overall KMO statistic was 0.882, well above the accepted threshold of 0.6, indicating the dataset's suitability for factor analysis. Individual KMO values ranged from 0.702 to 0.957, further confirming the appropriateness of each variable for inclusion. Bartlett's Test of Sphericity yielded a chi-square (χ^2) value of 4203 with 300 degrees of freedom and a highly significant p-value ($p < .001$). These results robustly affirm the presence of relationships among the variables, validating their suitability for factor analysis.

The subsequent parallel analysis identified six distinct factors, as illustrated in Figure 1. The number of factors corresponds to the points on the simulation data graph that intersect with the simulation curve, confirming the extraction of six factors. This analysis revealed a pattern of significant clustering of multiple items within individual factors. However, some items did not meet the desired factor loading threshold of 0.40. Specifically, items 2, 4, 15, 16, 18, 27, 28, 29, 33, 35, 36, and 37 exhibited lower factor loadings and were excluded from the scale to enhance its psychometric properties.

Figure 1.

Scree Plot Based on Parallel Analysis



To achieve the most interpretable factor structure, the ‘‘Maximum Likelihood’’ extraction method was employed for its statistical rigor and compatibility with the dataset. This was followed by a ‘‘Varimax rotation,’’ a widely used procedure that maximizes the variance of squared loadings across variables, helping to achieve a simple and interpretable structure. This

rotation method is particularly advantageous as it produces more clearly defined factors, making them easier to interpret in the context of the analyzed scale.

Table 1.

Factor Loadings and Uniqueness Values of the Items Based on EFA

Factor	1	2	3	4	5	6	Uniqueness
It_06	0.842						0.257
It_07	0.769						0.361
It_05	0.636						0.539
It_03	0.583						0.559
It_01	0.535						0.643
It_17	0.43						0.568
It_21		0.76					0.28
It_20		0.73					0.238
It_19		0.672					0.38
It_22		0.554					0.552
It_24			0.825				0.243
It_23			0.786				0.29
It_25			0.685				0.381
It_26			0.487				0.605
It_12				0.822			0.31
It_11				0.815			0.289
It_14				0.622			0.549
It_13				0.531			0.633
It_33					0.776		0.36
It_32					0.735		0.346
It_34					0.581		0.587
It_30					0.41		0.597
It_09						0.729	0.297
It_08						0.645	0.365
It_10						0.582	0.474

Factor 1 shows strong associations with items It_06 through It_17, suggesting it reflects a key dimension of the school climate. This factor was labeled "Interaction" as it pertains to the "Frequency of Interaction," "Quality of Interaction," and "Support for Positive Interaction" dimensions from the original scale. Factor 2 includes items It_21 through It_22, likely representing the "Promotion of Cultural Competence" dimension. Factor 3 has high loadings for items It_24 through It_26, indicative of the "Cultural Socialization" dimension. Factor 4 comprises items It_12 through It_13, which align with the "Stereotyping" dimension. Factor 5 corresponds to items related to the "Mainstream Socialization" dimension of the original scale, while Factor 6 includes items associated with the "Equal Status" dimension.

Table 2.

Total Loading, Explained Variance, and Cumulative Variance by Each Factor

Factor	SS loadings	% of variance	Cumulative %
Interaction	3.18	12.73	12.7
Promotion of cultural competence	2.56	10.23	23
Cultural socialization	2.55	10.19	33.1
Stereotyping	2.28	9.11	42.3
Mainstream socialization	2.1	8.4	50.7
Equal status	1.64	6.54	57.2

Table 2 presents the EFA results, detailing six factors along with their eigenvalues (SS Loadings), the percentage of variance each factor explains, and the cumulative variance explained. Factor 1 is the most significant, accounting for 12.73% of the variance. Factors 2 and 3 each explain slightly over 10% of the variance, bringing the cumulative variance to 33.1%. Factors 4 and 5 further increase the cumulative explained variance to over 50%. Factor 6, though the least influential, raises the total explained variance to 57.2%. These results underscore the dataset's multidimensional structure, with the six factors collectively explaining just over half of the total variance.

2- Confirmatory Factor Analysis

Table 3.

Model Fit Indices Based on CFA

Indices	Criteria	Model-1	Model-2
χ^2 / df	< 3	651/ 260 ≈ 2.504	578 / 257 ≈ 2.249
CFI	> .90	0.91	0.926
TLI	> .90	0.896	0.914
SRMR	< .08	0.0571	0.0553
RMSEA	< .08	0.0647	0.0589
RMSEA %90 CI		0.0585- 0.0709	0.0525 - 0.0653

During the EFA, the factor structure from Model 1 was directly applied to a CFA. Initial results showed that the Tucker-Lewis Index (TLI), a key measure of model fit, was below acceptable levels. To improve the model fit, recommendations from the analysis software were implemented, including adding residual covariance connections (as illustrated in Figure 2). After these adjustments, the revised model (Model 2) achieved index values within acceptable ranges, indicating an improved model fit.

Figure 2.

Path Graph Showing the Factor and Item Relationship Based on CFA

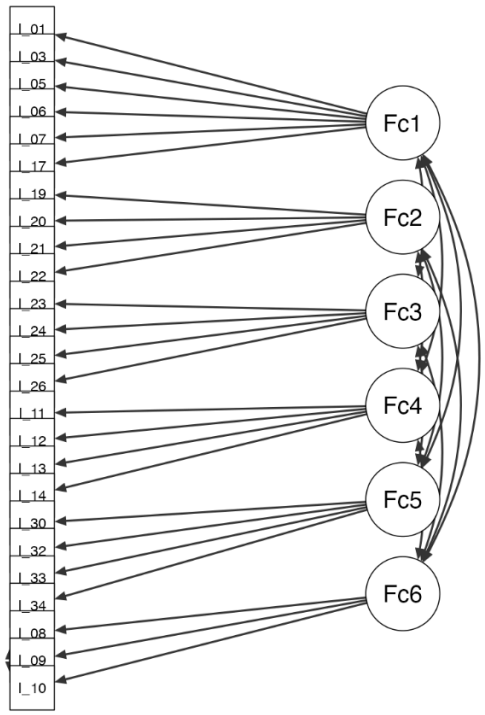


Table 4.

Factor Loading, Standard Error, Z-Values, and Significance Values Based on CFA

Factor	Indicator	Estimate	SE	Z	p
Interaction	It_01	0.561	0.051	11	< .001
	It_03	0.63	0.0521	12.1	< .001
	It_05	0.684	0.0473	14.5	< .001
	It_06	0.752	0.0501	15	< .001
	It_07	0.723	0.0451	16	< .001
Promotion of cultural competence	It_17	0.663	0.0467	14.2	< .001
	It_19	0.867	0.0488	17.8	< .001
	It_20	0.798	0.0444	18	< .001
	It_21	0.887	0.0526	16.9	< .001
	It_22	0.678	0.056	12.1	< .001
Cultural socialization	It_23	1.028	0.0562	18.3	< .001
	It_24	0.947	0.055	17.2	< .001
	It_25	0.924	0.0574	16.1	< .001
	It_26	0.889	0.0618	14.4	< .001
Stereotyping	It_11	0.883	0.0718	12.3	< .001
	It_12	0.834	0.0673	12.4	< .001
	It_13	0.851	0.0609	14	< .001
	It_14	1.035	0.0625	16.6	< .001
Mainstream socialization	It_30	0.719	0.0618	11.6	< .001
	It_32	0.739	0.0571	12.9	< .001
	It_33	0.823	0.0531	15.5	< .001
	It_34	0.801	0.059	13.6	< .001
Equal status	It_08	0.948	0.0528	17.9	< .001
	It_09	0.837	0.05	16.7	< .001
	It_10	0.859	0.0466	18.4	< .001

The table summarizes the CFA results, demonstrating a strong and statistically significant relationship between the factors of school climate for diversity and their respective indicators. Each factor—''Interaction'' ''Promotion of Cultural Competence,'' ''Cultural Socialization,'' ''Stereotyping,'' ''Mainstream Socialization,'' and ''Equal Status'' —exhibits high factor loadings ranging from 0.561 to 1.035, indicating strong associations with the constructs they represent. These relationships are further supported by high Z-scores and p-values below 0.001 for all factors, confirming a well-fitting model and the effective measurement of the school climate for diversity.

3- *Reliability*

Table 5.

Reliability Coefficient, Cronbach and McDonald Values

Dimensions	Cronbach's α	McDonald's ω
Interaction	0.850	0.845
Promotion of cultural competence	0.862	0.844
Cultural socialization	0.842	0.855
Stereotyping	0.811	0.82
Mainstream socialization	0.784	0.722
Equal status	0.821	0.865

The dimensions of the scale show good reliability, as indicated by Cronbach's alpha and McDonald's omega values, with all dimensions exceeding the commonly accepted cutoff of 0.7. This indicates that the scale is well-constructed, with items that consistently represent their respective constructs.

4- Perceptions of Participants

Table 6.

The Number of Participants, Mean, Standard Deviation, Skewness and Kurtosis of Each Dimension

Dimensions	N	Mean	SD	Skewness	Skew. SE	Kurtosis	Kurt. SE
Interaction	718	3.93	0.723	-0.564	0.0912	0.325	0.182
Promotion of cultural competence	718	3.68	0.893	-0.525	0.0912	0.141	0.182
Cultural socialization	718	3.42	1.019	-0.481	0.0912	-0.305	0.182
Stereotyping	718	2.25	1.011	0.363	0.0912	-0.869	0.182
Mainstream socialization	718	3.44	0.892	-0.345	0.0912	-0.142	0.182
Equal status	718	3.93	0.898	-0.753	0.0912	0.261	0.182

Table 6 presents statistical measures of participant perceptions across six dimensions of school climate, all based on 718 responses. Interaction and Equal Status have high average scores (mean ~3.93), reflecting positive perceptions. The negative skewness values indicate that

responses are skewed toward higher scores, with distributions slightly more peaked than a normal distribution. Promotion of Cultural Competence and Mainstream Socialization show moderately high means (around 3.68 and 3.44, respectively) and are slightly skewed toward higher scores, suggesting generally positive perceptions. Cultural Socialization has a lower mean score (3.42) and the highest standard deviation, indicating a wider range of responses. It shows slight negative skewness and a flatter distribution compared to normal. Stereotyping stands out with a considerably lower mean score (2.25), reflecting less favorable perceptions. Its positive skewness suggests more responses clustered at the lower end of the scale, with a flatter distribution indicating varied participant perceptions.

5- Cluster Analysis

A cluster analysis was conducted to group participants based on their perceptions of various school climate dimensions. This method grouped 718 data points into four distinct clusters. The analysis produced a Between-group Sum of Squares of 110.73, indicating significant variance among the clusters, with higher values signifying a greater degree of separation between groups. The Within-group Sum of Squares was 114.73, reflecting variance within each cluster, with lower values suggesting closer relationships among members of each group. The Total Sum of Squares amounted to 225.46, representing the overall variance across all data points.

Table 7.

Average Value of Each Cluster's Center

Clusters	Number of participants	Cultural socialization	Equal status	Interaction	Mainstream socialization	Promotion of cultural competence	Stereotyping
Cluster 1	183	2.72	4.18	4.03	2.92	3.49	1.50
Cluster 2	173	2.72	2.89	3.25	2.80	2.78	2.78
Cluster 3	195	4.03	3.98	3.92	3.93	4.00	3.23
Cluster 4	167	4.18	4.66	4.56	4.11	4.46	1.38

Cluster 1, consisting of 183 participants, shows moderate to high average scores for Equal Status (4.18) and Interaction (4.03), reflecting positive perceptions in these areas. However, it records the lowest average scores for Cultural Socialization (2.72) and Stereotyping (1.49), indicating less favorable views on these dimensions. This pattern suggests that while participants perceive interaction and status positively, there is significant room for improvement in fostering cultural socialization and reducing stereotypes. Therefore, this cluster can be labeled "Developing Interaction and Status."

Cluster 2, comprising 173 participants, exhibits lower average scores across all dimensions compared to other clusters. It has the lowest scores for Equal Status (2.89) and Interaction (3.25) but a relatively higher average for Stereotyping (2.78), indicating more negative perceptions or experiences with stereotyping. These patterns suggest a need for

significant improvement in fostering a positive school climate and enhancing cultural competence. As such, this cluster can be labeled "Emergent Climate."

Cluster 3, with 195 participants, shows high average scores across all dimensions, with Stereotyping being the lowest (3.23). This suggests overall positive perceptions, particularly in Cultural Socialization (4.03) and Promotion of Cultural Competence (4.00), reflecting strong endorsements of these areas. While the scores indicate a well-rounded and positive perception of the school climate, the moderate score for Stereotyping highlights a need for continued attention. This cluster can be labeled "Balanced Positivity."

Cluster 4, consisting of 167 participants, shows the highest average scores for Equal Status (4.66), Interaction (4.56), and Promotion of Cultural Competence (4.46), reflecting very positive perceptions in these areas. It also has a very low average score for Stereotyping (1.38), indicating that respondents perceive minimal stereotyping. Featuring the highest scores in key dimensions, this cluster suggests a highly positive and inclusive climate with strong engagement. However, the low stereotyping score might reflect a lack of awareness or reporting. This cluster can be labeled "Inclusive and Engaged."

DISCUSSION

The findings of this study provide valuable insights into the multidimensional structure of school climate for diversity and the complex relationships between factors such as interaction, cultural competence, and socialization. The results of the EFA and CFA confirm the existence of six distinct factors that significantly affect students' perceptions of school climate. These findings align with existing literature, highlighting the critical role of fostering a culturally responsive and inclusive school environment in promoting positive educational outcomes (Howard, 2006; Banks & Banks, 1995).

The EFA results identified six factors that collectively explain over 57% of the total variance, highlighting the multidimensional nature of school climate. Factor 1, labeled "Interaction," is the most significant, accounting for 12.73% of the variance and focusing on the quality, frequency, and support for positive interactions within the school environment. This finding aligns with previous research highlighting the importance of interpersonal relationships in shaping a supportive school climate (Terrell et al., 2023). The remaining factors—Promotion of Cultural Competence, Cultural Socialization, Stereotyping, Mainstream Socialization, and Equal Status—represent essential dimensions of cultural responsiveness in schools, each contributing uniquely to students' perceptions of their educational environment.

The strong factor loadings across these dimensions suggest that students' perceptions of school climate are shaped by different aspects of the school's cultural and social environment. High scores in Interaction and Equal Status suggest positive perceptions, reflecting a supportive and inclusive climate. Conversely, lower scores in Stereotyping highlight persistent challenges related to bias and prejudice, underscoring the need for schools to focus on addressing these

issues. These findings align with studies emphasizing the importance of combating stereotyping and promoting critical consciousness among students (Pilotti & Al Mubarak, 2021; Polat, 2020).

The cluster analysis provides further insights into students' diverse perceptions of school climate, identifying four distinct clusters with unique characteristics that highlight strengths and areas for development within the school environment. Cluster 1, "Developing Interaction and Status," exhibits high scores in Interaction and Equal Status but lower scores in Cultural Socialization and Stereotyping. This suggests that while students feel supported in interpersonal relationships and status, efforts are needed to enhance cultural socialization and address stereotypes. These findings align with prior research on the role of culturally responsive teaching in promoting socialization and reducing bias (Claiborne & Dixson, 2024; Moody & Matthews, 2020). Cluster 2, "Emergent Climate," reflects students with lower scores across most dimensions, particularly in Equal Status and Interaction. This cluster highlights a critical need for intervention, as these students likely perceive a less supportive and inclusive environment. The relatively high score in Stereotyping within this group underscores the necessity of targeted strategies to improve cultural competence and reduce prejudice, echoing findings on the importance of equitable learning environments (Aldana et al., 2012).

Conversely, Cluster 3, "Balanced Positivity," and Cluster 4, "Inclusive and Engaged," exhibit high average scores across most dimensions, with particularly strong endorsements in Cultural Socialization and Promotion of Cultural Competence. These clusters indicate that many students perceive their schools as inclusive environments that value diversity. However, the relatively lower score in Stereotyping, even within these clusters, highlights the ongoing challenge of addressing bias and stereotypes systematically.

These findings are consistent with prior research emphasizing the role of culturally responsive teaching and school climate in shaping students' academic and social experiences (Epstein et al., 2015; Aronson & Laughter, 2015). For example, schools that emphasize cultural competence and socialization often foster more positive student perceptions, enhancing engagement and critical thinking about societal issues (Chimbunde et al., 2003; Steyn & Vanyoro, 2023; Tamimi, 2024). Additionally, the results align with studies showing that a positive school climate—characterized by supportive interactions and equal status among students—is associated with improved mental health and academic outcomes (Aldridge & Blackstock, 2024).

The cluster analysis underscores that perceptions of school climate are not uniform, with different student groups experiencing the environment in distinct ways. These findings align with research in Kazakhstan, which highlights the role of teachers, peers, and parents in shaping students' perceptions of school climate, while also noting significant variations across diverse student groups (Winter et al., 2022).

CONCLUSION

These findings carry important implications for schools aiming to improve their climate for diversity. The strong positive perceptions of Interaction and Equal Status indicate progress in fostering a supportive and inclusive environment. However, the lower scores in Stereotyping and Cultural Socialization highlight areas requiring attention. Schools should work to reduce biases and stereotypes by integrating culturally responsive teaching strategies into their curricula, as evidenced by the effectiveness of programs promoting cultural competence (Morrison et al., 2008). Additionally, the significant role of interaction in shaping positive school climate perceptions underscores the importance of building strong relationships between students and educators. Initiatives such as peer mentoring programs and professional development for teachers in cultural competence can foster positive interactions and contribute to a more inclusive environment for all students.

While the study provides valuable insights into the factors influencing school climate, several limitations should be acknowledged. The reliance on self-reported data may introduce response bias, and the exclusion of items with low factor loadings in the EFA could have reduced the analysis's comprehensiveness. Future research should focus on developing more robust measures of school climate that encompass a broader range of culturally responsive practices. Additionally, longitudinal studies are needed to examine how changes in school climate over time impact student outcomes. Further research should also examine targeted strategies to address areas with lower scores, such as Stereotyping and Cultural Socialization, particularly in diverse educational contexts like Kazakhstan, where cultural and linguistic diversity significantly shape student experiences.

This study underscores the multidimensional nature of school climate and the importance of fostering culturally responsive environments to support diverse student populations. The findings shed light on both the strengths and areas needing improvement, particularly in reducing stereotypes and enhancing cultural socialization. Addressing these areas can help schools create more equitable and inclusive learning environments that promote the academic, social, and emotional well-being of all students.

Acknowledgment

This research was funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No. AP15473463).

REFERENCES

Abdullina, Z. (2013). Ethno-demographic structure of Kazakhstan and features of national police in RK Consolidation of the people of Kazakhstan. *Institute of Philosophy, Political Science and Religious Studies of the Science Committee Ministry of Education and Science of the Republic Kazakhstan*, s. 90-99. https://e-history.kz/media/upload/72/2013/09/05/3e46d2c62ac022b08bc8dc9907ff8910.pdf.

Aldana, A., Rowley, S. J., Checkoway, B., Richards-Schuster, K. (2012). Raising ethnic-racial consciousness: The relationship between intergroup dialogues and adolescents' ethnic-racial identity and racism awareness. *Equity & Excellence in Education, 45*(1), 120-137.

Aldridge, J.M., Blackstock, M.J. (2024). Assessing students' perceptions of school climate in primary schools. *Learning Environ Res.* 1-24*. https://doi.org/10.1007/s10984-024-09492-2*.

Aronson B. & Laughter J. (2016). The theory and practice of culturally relevant education. *Rev. Educ. Res., 86(1)*, s. 163-206. https://doi.org/10.3102/0034654315582066.

Assyltayeva, E.., Tarman, B., Ishmukhamedov, S.., Mukhambedyarova, A., Tolen, Z.., & Yussupova, S. (2024). Civil identity of young Kazakhstanis in the context of the Russian-Ukrainian conflict. *Journal of Ethnic and Cultural Studies*, *11*(2), 81–104. https://doi.org/10.29333/ejecs/2052

Banks, C.A & Banks, J.A. (1995). Equity pedagogy: An essential component of multicultural education. *Theory into Practice, 34(3)*, s. 152-158.

Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine, 25(24)*, s. 3186-3191.

Benner, A. D., Wang, Y., Shen, Y., Boyle, A. E., Polk, R., & Chow, Y. P. (2018). Race/ethnic discrimination and well-being during adolescence: A meta-analytic review. *American Psychologist, 73*(7), 855-883.

Bottiani, J. H., Bradshaw, C. P., & Mendelson, T. A. (2018). multilevel examination of racial disparities in high school discipline: Black and White adolescents' perceived equity, school belonging, and adjustment problems. *Journal of Educational Psychology 110(4)*, 532-545.

Byrd, C. M. (2014). The associations of intergroup interactions and school racial socialization with academic motivation. *The Journal of Educational Research, 108(1)*, 10–21. https://doi.org/10.1080/00220671.2013.831803.

Byrd, C. M. (2017). The complexity of school racial climate: Reliability and validity of a new measure for secondary students. *British Journal of Educational Psychology*, 1-22. DOI:10.1111/bjep.12179.

Byrd, C. M. (2018). The present is prologue: School climate and belonging in historically Black colleges and universities. *Journal of Diversity in Higher Education, 11(3)*, s. 282-290.

Claiborne, J.R., Dixson, D.D. (2024). How psychosocial factors relate to climate in a racially stratified sample school. *Child Youth Care Forum 53*, 1173–1189. https://doi.org/10.1007/s10566-023-09791-4.

Carothers, D., Aydin, H., & Halpern, C. (2021). Campus attitudes toward academic and social inclusion of students with intellectual disability. *Journal of Curriculum Studies Research, 3*(2), 122-147. https://doi.org/10.46303/jcsr.2021.2

Chimbunde, P., Moreeng, B., & Chawira, M. (2023). A model for developing critical thinking skills in teaching history: Lessons from Zimbabwe. *Journal of Culture and Values in Education, 6*(3), 194-212. https://doi.org/10.46303/jcve.2023.28

Cornell, D., Sheras, P., Gregory, A., & Fan, X. (2020). Authoritative school climate and college endorsement: Variability across elementary schools. *Elementary School Journal, 120(3)*, 576-604.

Epstein, J., Santo, R. M., & Guillemin, F. (2015). A review of guidelines for cross-cultural adaptation of questionnaires could not bring out a consensus. *Journal of Clinical Epidemiology, 68(4)*, 435-441.

Hollins, E.R., King, J. & Hayman. W.C. (1994). *Teaching diverse populations: Formulating a knowledge base edited by* . State University of New York Press.

Howard, G. R. (2006). *We can't teach what we don't know: White teachers, multiracial schools* . Teachers College Pr; 2nd edition.

Japar, M., Hermanto, H., Muyaroah,S., Susila, H.R. & Alfani, H. (2023). Digital literacy-based multicultural education through civic education in Indonesian junior high schools, *Journal of Social Studies Education Research, 14(*4), 328-349. https://jsser.org/index.php/jsser/article/view/5281/651

Jagers, R. J., Rivas-Drake, D., & Williams, B. . (2018). Transformative social and emotional learning (SEL): Toward SEL in service of educational equity and excellence. *Educational Psychologist, 54(3)*, 162-184.

Karimova, B., Ailauova, Z., Nurlanbekova, Y. & Bazylova, B. (2024). Cultivating students' cross-cultural and linguacultural competences: Navigating challenges and opportunities, *Journal of Social Studies Education Research,* 15(3), 400-423. https://jsser.org/index.php/jsser/article/view/5852/692

Kilinc, E., Tarman, B., & Yussupova, S. (2023). The association between college students` participation behavior and social media use. *Research in Social Sciences and Technology*, *8*(2), 55-67. https://doi.org/10.46303/ressat.2023.11

Laughter J.C., Adams A.D. (2012). Culturally relevant science teaching in middle school. *Urban Educ 47*, s. 1106–1134. https://doi.org/10.1177/0042085912454443.

Moody, S., & Matthews, S. (2020). Pathways to becoming a culturally responsive teacher: Narrative inquiries into a translanguaging read aloud. *Journal of Curriculum Studies Research, 2*(2), 170-188. https://doi.org/10.46303/jcsr.2020.15

Morrison K., Robbins H.H. (2008). Operationalizing culturally relevant pedagogy: A synthesis of classroom-based research. *Equity & Excellence in Education 41(4)*, 433-452. doi:10.1080/10665680802400006.

Nam, A. (2023). Medium of instruction, national identity and attitudes towards gender roles in Kazakhstan. The steppe and beyond: . N. T. Durrani içinde, *The Political Economy of Education in Central Asia. The Steppe and Beyond: Studies on Central Asia.* Palgrave Macmillan, Singapore. https://doi.org/10.1007/978-981-99-8517-3_8.

Nizri, H., Hemi, A. & Levy-Gigi, E. (2024). Regulatory flexibility and school climate moderate the relationship between stress exposure and depression severity in school educators. *Sci Rep 14, 11543. https://doi.org/10.1038/s41598-024-62150-8*.

Pai, Y. (1990). *Cultural foundations of education.* Merrill/Macmillan.

Pilotti, M., & Al Mubarak, H. (2021). Systematic versus informal application of culturally relevant pedagogy: Are performance outcomes different? A study of college students. *Journal of Culture and Values in Education, 4*(2), 14-26. https://doi.org/10.46303/jcve.2021.1

Polat, S. (2020). Multidimensional analysis of the teaching process of the critical thinking skills. *Research in Social Sciences and Technology, 5*(2), 134-157. https://doi.org/10.46303/ressat.05.02.8

Smith, G. (1998). *Common sense about common knowledge: The knowledge bases for diversity. .* American Association of Colleges for Teacher Education.

Steyn, M., & Vanyoro, K. (2023). Debunking critical theory's 'indoctrination' charge: Provisional notes on critical diversity literacy pedagogy. *Research in Educational Policy and Management, 5*(3), 128-144. https://doi.org/10.46303/repam.2023.27

Tamimi, M. (2024). Effects of digital story-telling on motivation, critical thinking, and academic achievement in secondary school English learners. *Research in Social Sciences and Technology, 9*(1), 305-328. https://doi.org/10.46303/ressat.2024.18

Temirbayeva, A. &. (2024, 09 30). *Ethnopolitical dictionary published in Kazakhstan*. Zakon.kz: https://www.zakon.kz/redaktsiia-zakonkz/4686991-v-kazakhstane-izdali.html

Terrell, J.H., Henrich, C.C., Miskell, R. (2023). Measuring school climate as a component of school capacity. *Contemp School Psychol. https://doi.org/10.1007/s40688-023-00488-y*.

Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research, 83(3)*, s. 357-385.

Thomas, O., Davidson, W., McAdoo, H. . (2008). An evaluation study of the Young Empowered Sisters (YES!) Program: Promoting cultural assets among African American adolescent girls through a culturally relevant school-based intervention. *Journal of Black Psychology, 34*, 281-308.

Tuymebaev, J. K., Sadvokasova, A. K., Suleimenova, E. D., Prokopenko, L. A., Tulegul, G., Shaimerdenova, N. J., . . . Kosherbaev, D. B. (2020). *Terms and concepts of Kazakhstan ethnopolitics and practices.* Academic Council of the Academy of Public Administration under the President of the Republic of Kazakhstan.

Winter, L., Hernández-Torrano, D., McLellan, R. (2022). A contextually adapted model of school engagement in Kazakhstan. *Curr Psychol 41*, 2479–2495, https://doi.org/10.1007/s12144-020-00758-5.

Yakavets, N. (2014). Reforming society through education for gifted children: the case of Kazakhstan. *Research Papers in Education, 29(5)*, 513-533.

Yussupova, S., Tarman, B., Kilinc, E., Tolen, Z., Assyltayeva, E. (2023). Adaptation of the Global Citizenship Scale in a Multicultural Country: Kazakhstan, *Journal of Social Studies Education Research*, *14*(3), 305-327. https://jsser.org/index.php/jsser/article/view/5169/636

Zakiah L., Sarkadi, Komarudin, Casmana A., Kusmawati A. (2023). Implementation of teaching multicultural values through civic education for elementary school students. *Journal of Social Studies Education Research 14 (1)*, 110-142. https://jsser.org/index.php/jsser/article/view/4547/608