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Group Differences in Junior High Students' Digital Age English Oral Self-Directed Motivation

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With the rapid digitalization of language education, understanding students' motivation for self-directed English oral learning has become critical. However, little is known about whether and how motivation differs systematically across urban–rural divides, school types, and family socioeconomic status (SES) in the digital era. This study, based on a large-scale survey of 1,680 junior high school students across eastern, central, and western China and supplemented by semi-structured interviews, examines the overall level and structural characteristics of English oral self-directed learning motivation, with a focus on group differences. Results show that (1) overall motivation is moderate (M=3.21), with extrinsic motivation (M=3.35) significantly dominating over intrinsic motivation (M=2.98); (2) significant disparities exist: urban, key school, and high-SES students report higher motivation, particularly intrinsic motivation, while rural, ordinary school, and low-SES students rely more on extrinsic drivers; (3) qualitative data reveal that disadvantaged groups often perceive oral English as a "task" or "exam requirement," whereas advantaged groups associate it with interest and self-expression. These findings suggest that the digital age has not automatically equalized learning motivation; instead, it has produced a "motivational stratification" that mirrors existing social inequalities. Policy and pedagogical implications for digital equity are discussed.

Keywords: English oral learning motivation, self-directed learning, group differences, digital divide, junior high school students, educational equity

INTRODUCTION

Background

The integration of digital technology into language learning has transformed where, when, and how students learn English. In many countries, including China, junior high school students increasingly use digital tools (e.g., language learning apps, AI oral tutors, online video materials) for self-directed English oral practice. In theory, digital

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resources could democratize access to quality language input and reduce traditional gaps between urban and rural learners.

However, emerging evidence suggests that digital access alone does not guarantee motivated or effective learning. Students from different backgrounds may use digital tools in fundamentally different ways, leading to what some scholars call the "second-level digital divide" (skills and usage) and "third-level digital divide" (outcome gaps). In the context of English oral learning, motivation—especially the distinction between intrinsic (learning for enjoyment) and extrinsic (learning for rewards or avoidance of punishment) motivation—is a key outcome that shapes long-term engagement and proficiency.

Despite its importance, there is a lack of large-scale, systematic research on the current state of junior high school students' English oral self-directed learning motivation and, more importantly, whether and how this motivation varies across urban–rural lines, school types (key vs. ordinary vs. private), and family socioeconomic status (SES). Several recent studies have examined motivation in technology-enhanced language learning contexts (Boudadi et al., 2024; Hongxia & Razali, 2026), while others have explored motivational orientations in oral English learning (Dunifa, 2023; Tiang-uan, 2024) and the relationship between attitudes, motivations and gender (Harmanto et al., 2023).

Research Questions

This study addresses two specific questions:

What are the overall level and structural characteristics (intrinsic, extrinsic, and amotivation) of junior high school students' English oral self-directed learning motivation?

Are there significant group differences in motivation levels and structures across (a) urban/rural residence, (b) school types, and (c) family SES? If so, what patterns do these differences exhibit?

We deliberately set aside complex mediating or moderating mechanisms (e.g., digital capital as a mediator) to provide a clear, evidence-based description of motivation stratification.

CONTEXT AND REVIEW OF LITERATURE

Self-Determination Theory and Motivation Structure

According to Deci and Ryan's (1985) self-determination theory, motivation can be categorized into intrinsic motivation (driven by interest and enjoyment), extrinsic motivation (driven by external rewards or pressures), and amotivation (lack of intentionality). In language learning, intrinsically motivated learners are more likely to engage in self-directed practice, persist in challenges, and achieve higher proficiency (Dörnyei & Ushioda, 2011).

However, most existing studies on English learning motivation have focused on college or high school students, with less attention to junior high school learners. Moreover, they rarely examine the relative strength of intrinsic vs. extrinsic motivation in digital self-directed contexts. Recent research published in the International Journal of Instruction has highlighted the importance of understanding motivational structures in technology-enhanced environments (Angraini & Wahyuni, 2021; Brković et al., 2021).

Digital Divide and Group Disparities

Van Dijk's (2020) digital divide theory distinguishes between motivational/physical access, skills, and usage. Later scholars (e.g., Rodríguez-Camacho et al., 2024) propose the concept of "digital capital" as the accumulation of digital resources and competencies. But even when students have similar digital access, their motivation to use digital tools for oral English learning may differ systematically by social background.

Research in China and elsewhere has shown that urban students and those from higher-SES families tend to have more supportive home environments, greater parental involvement, and more exposure to diverse digital learning practices (Bohnert & Gracia, 2023; Shi et al., 2024). Nevertheless, few studies have directly compared how these background factors shape intrinsic vs. extrinsic motivation for oral English.

Theoretical Framework of This Study

We adopt a simple, focused framework: motivational stratification—the idea that group differences in motivation are not random but follow systematic patterns of social inequality. Specifically, we hypothesize that:

Students from urban areas, key schools, and high-SES families will show higher overall motivation and especially higher intrinsic motivation.

Rural, ordinary school, and low-SES students will show motivation profiles dominated by extrinsic reasons (e.g., exams, teacher requirements).

This framework does not test causal mechanisms but provides a descriptive baseline essential for subsequent intervention research.

METHOD

Research Design

We used an explanatory sequential design, with quantitative survey as the primary method and qualitative interviews to illustrate and contextualize the quantitative findings. This design is appropriate for describing group differences and providing interpretive depth.

Participants

Quantitative Sample

A multi-stage stratified random sampling strategy was employed to recruit junior high school students from China's eastern (Jiangsu, Guangdong), central (Hubei, Henan), and western (Sichuan, Gansu) regions. Sampling strata included:

Urban–rural type: city, county town, rural

School type: public key school, public ordinary school, private school

Grade: 7, 8, 9

Family SES: high, medium, low (based on parental education, occupation, and household income)

A total of 1,850 questionnaires were distributed; 1,723 were returned, and after excluding invalid responses (incomplete, patterned, or contradictory), 1,680 valid questionnaires remained (effective rate 90.8%). Table 1 shows demographic characteristics.

Table 1
Sample demographics (N=1,680)

Variable	Category	N	%
Gender	Male	826	49.2
	Female	854	50.8
Grade	7	583	34.7
	8	567	33.8
	9	530	31.5
Urban–rural	City	652	38.8
	County town	548	32.6
	Rural	480	28.6
School type	Public key	396	23.6
	Public ordinary	840	50.0
	Private	444	26.4
Family SES	High	420	25.0
	Medium	840	50.0
	Low	420	25.0

Qualitative Sub-sample

Based on quantitative cluster analysis results, 36 students (selected from four motivation type groups), 12 English teachers (with diverse teaching backgrounds), and 13 parents (varying in SES and location) participated in semi-structured interviews. Additionally, six schools (two urban public key, two urban ordinary, one county private, one rural public) were selected for classroom observations and case documentation.

Instruments

3.3.1. English Oral Self-Directed Learning Motivation Scale

This scale was developed based on self-determination theory and consisted of 24 items rated on a 5-point Likert scale (1=strongly disagree, 5=strongly agree). It included five sub-dimensions:

Intrinsic motivation (8 items, e.g., "I practice spoken English because I enjoy it")

Extrinsic motivation – instrumental (4 items, e.g., "to get good grades")

Extrinsic motivation – social (4 items, e.g., "to be praised by teachers")

Extrinsic motivation – normative (4 items, e.g., "because it is required")

Amotivation (4 items, e.g., "I don't see the point")

The total scale had a Cronbach's α of 0.917, with sub-scale αs ranging from 0.829 to 0.889. Confirmatory factor analysis showed acceptable fit: $\chi^2/df=2.41$, RMSEA=0.064, CFI=0.932, TLI=0.925.

Demographic and Background Variables

We collected urban–rural status (self-reported), school type (official classification), and family SES (composite score based on parent education, occupation, and household assets, trichotomized as high/medium/low).

Semi-Structured Interview Guides

Separate interview guides for students, teachers, and parents focused on: (a) perceived reasons for learning spoken English, (b) use of digital tools for oral practice, (c) feelings of enjoyment or pressure, and (d) perceived differences between advantaged and disadvantaged learners.

Data Collection and Analysis

Quantitative data were collected from January to June 2025 via a mixed mode (paper and online). SPSS 26.0 was used for descriptive statistics, t-tests, one-way ANOVA, and post-hoc comparisons (Tukey's HSD).

Qualitative interviews were audio-recorded, transcribed verbatim, and analyzed using thematic analysis in NVivo 12.0. Two researchers independently coded 20% of the transcripts to ensure reliability ($\kappa=0.84$).

FINDINGS

Overall Level and Structure of English Oral Self-Directed Learning Motivation

Table 2 presents the descriptive statistics. The overall motivation score was moderate ($M = 3.21$, $SD = 0.68$). Importantly, extrinsic motivation ($M = 3.35$) was significantly higher than intrinsic motivation ($M = 2.98$), $t(1679) = 22.14$, $p < 0.001$, Cohen's $d = 0.54$. Amotivation was low ($M = 2.17$).

Within extrinsic motivation, instrumental reasons (e.g., exams) were strongest ($M = 3.42$), followed by normative ($M = 3.32$) and social ($M = 3.31$) reasons. This pattern

indicates that junior high school students' oral English learning is driven more by external pressures and practical utility than by genuine interest.

Table 2
Descriptive statistics of motivation (N = 1,680)

Variable	Mean (M)	SD	Skewness	Kurtosis
Intrinsic motivation	2.98	0.75	-0.12	0.23
Extrinsic (instrumental)	3.42	0.65	-0.28	0.41
Extrinsic (social)	3.31	0.67	-0.19	0.35
Extrinsic (normative)	3.32	0.61	-0.22	0.30
Amotivation	2.17	0.82	0.44	-0.15
Overall motivation	3.21	0.68	-0.18	0.28

Group Differences in Motivation: Main Effects**

Urban–Rural Differences

One-way ANOVA revealed significant differences in overall motivation across urban–rural groups, $F(2, 1677) = 37.84$, $p < 0.001$, $\eta^2 = 0.043$. Post-hoc tests (Tukey) indicated that city students scored higher than county town students ($p < 0.01$) and rural students ($p < 0.001$). Rural students had the lowest overall motivation.

The gap was largest for intrinsic motivation: rural ($M = 2.71$) vs. city ($M = 3.18$), difference = 0.47, $p < 0.001$, Cohen's $d = 0.64$. Extrinsic motivation differences were smaller but still significant (city vs. rural, diff = 0.29, $p < 0.01$).

School Type Differences

Significant differences were found across school types. Public key school students reported the highest overall motivation ($M = 3.43$), followed by private ($M = 3.24$), and public ordinary ($M = 3.10$). The intrinsic motivation gap between key and ordinary schools was particularly pronounced (diff = 0.53, $p < 0.001$, $d = 0.71$), suggesting that school resources play a critical role in fostering interest.

Family SES Differences

A clear SES gradient emerged. High-SES students demonstrated the highest levels of overall motivation ($M = 3.49$) and intrinsic motivation ($M = 3.33$). Conversely, low-SES students showed significantly lower levels, particularly in intrinsic motivation ($M = 2.58$). The substantial gap between high and low SES groups (0.75, $p < 0.001$, $d = 0.96$) underscores the impact of socioeconomic background on motivational structures.

Interactive Effects: Two-Way ANOVA

To examine whether the effects of urban–rural status and SES combine additively or interactively, a two-way ANOVA was conducted with intrinsic motivation as the dependent variable. Results showed significant main effects for both urban–rural, $F(2, 1671) = 31.24$, $p < 0.001$, $\eta^2 = 0.036$, and SES, $F(2, 1671) = 98.67$, $p < 0.001$, $\eta^2 = 0.106$. Crucially, the interaction was also significant, $F(4, 1671) = 3.82$, $p = 0.004$, $\eta^2 = 0.009$.

Table 3 presents the cell means. The interaction pattern reveals a compound disadvantage: rural low-SES students had extremely low intrinsic motivation (M = 2.45), far below what would be expected from the additive main effects alone. Conversely, urban high-SES students enjoyed a synergistic advantage (M = 3.52).

Table 3
Two-way interaction: Urban–rural × SES on intrinsic motivation (M)

Urban–rural	High SES	Medium SES	Low SES	Row mean
City	3.52	3.20	2.88	3.20
County town	3.25	2.95	2.65	2.95
Rural	3.00	2.70	2.45	2.72
Column mean	3.33	2.95	2.66	

Note: Interaction $F(4,1671)=3.82$, $p=0.004$, $\eta^2=0.009$.

Hierarchical Regression: Disentangling Net Effects

Simple group comparisons may confound overlapping factors (e.g., urban students tend to have higher SES). To identify the net contribution of each background variable, a hierarchical multiple regression was performed with overall motivation as the dependent variable (see Table 4).

Model 1 (only urban–rural dummy): Urban–rural explained 4.3% of variance (β for rural = -0.21, $p < 0.001$).

Model 2 (added SES and grade): SES showed the strongest effect ($\beta = 0.32$, $p < 0.001$). The urban–rural coefficient dropped to $\beta = -0.12$ ($p < 0.01$), indicating partial mediation.

Model 3 (added school type): School type (key vs. ordinary) was significant ($\beta = 0.22$, $p < 0.001$). With school type included, urban–rural became non-significant ($\beta = -0.05$, $p = 0.12$), whereas SES and school type remained significant.

This suggests that the apparent urban–rural gap in motivation is largely explained by unequal distribution of SES and school resources. Family SES is the strongest independent predictor, followed by school type.

Table 4
Hierarchical regression predicting overall motivation (Standardized β)

Predictor	Model 1	Model 2	Model 3
Urban–rural (ref=city)			
County town	-0.09**	-0.05*	-0.03
Rural	-0.21***	-0.12**	-0.05
SES (high to low)		0.32***	0.28***
Grade		0.04	0.03
School type (ref=ordinary)			
Key school			0.22***
Private school			0.08*
R^2	0.043	0.112	0.148
ΔR^2	0.043***	0.069***	0.036***

*Note: *p<0.05, **p<0.01, ***p<0.001. N=1,680.*

Comparing Effect Sizes: Which Factor Matters Most?

We compared eta-squared (η^2) values from separate one-way ANOVAs on intrinsic motivation (Table 5). Family SES produced the largest effect ($\eta^2 = 0.068$, medium-to-large), followed by school type ($\eta^2 = 0.042$, medium), and urban–rural ($\eta^2 = 0.031$, small-to-medium). Gender and grade had negligible effects ($\eta^2 < 0.005$). This ranking reinforces that socioeconomic background is the primary stratifier of intrinsic motivation for oral English self-directed learning.

Table 5
Effect sizes (η^2) for group differences in intrinsic motivation

Variable	η^2	Interpretation
Family SES	0.068	Medium–large
School type	0.042	Medium
Urban–rural	0.031	Small–medium
Grade	0.005	Negligible
Gender	0.002	Negligible

Latent Profile Analysis: Motivation Types

Beyond mean differences, we explored whether students cluster into distinct motivation profiles. A K-means cluster analysis was performed using three indicators: intrinsic motivation, extrinsic motivation (total), and amotivation. The four-cluster solution was most interpretable (see Table 6):

Type A–High intrinsic, high extrinsic (23.1%): "Dual high" – motivated by both interest and external rewards. Predominantly urban, key school, high-SES.

Type B–High extrinsic, low intrinsic (40.8%): "Extrinsic dominant" – the largest group. Driven by exams, grades, or teacher requirements, but lack genuine interest. Overrepresented in rural areas and ordinary schools.

Type C–Low intrinsic, low extrinsic, moderate amotivation (18.2%): "Low motivation" – disengaged. Higher proportion among low-SES and rural students.

Type D–Moderate on all (17.9%): "Average" – near the mean on all three dimensions.

Chi-square tests revealed significant associations between profile membership and urban–rural status ($\chi^2(6)=84.3$, $p<0.001$), school type ($\chi^2(6)=112.6$, $p<0.001$), and SES ($\chi^2(6)=136.2$, $p<0.001$). For instance, 58.3% of rural students fell into Type B (extrinsic dominant), compared to only 28.7% of city students. Conversely, 35.2% of city students were Type A (dual high), versus 9.8% of rural students.

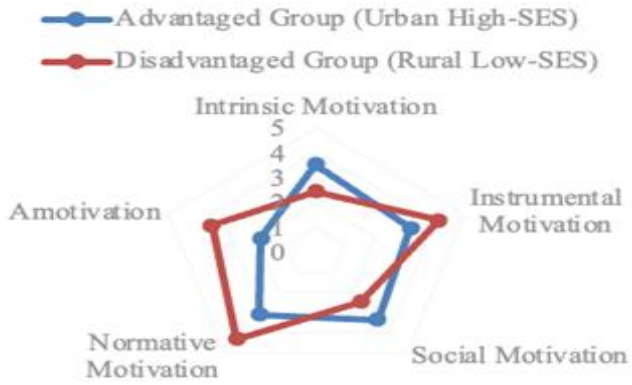
These profiles demonstrate that group differences are not merely quantitative (higher/lower scores) but qualitative: disadvantaged students are systematically located in motivation profiles that lack intrinsic drive.

Table 6
Motivation profiles and composition

Profile	% of sample	Key features	Overrepresented groups
Type A: Dual high	23.1%	High intrinsic, high extrinsic	Urban, key school, high SES
Type B: Extrinsic dominant	40.8%	Low intrinsic, high extrinsic	Rural, ordinary school, low SES
Type C: Low motivation	18.2%	Low intrinsic, low extrinsic, amotiv.	Low SES, rural
Type D: Moderate	17.9%	Near average on all	Mixed

The radar chart visually captures the "motivational deformation" of disadvantaged learners.

Figure 1
Motivational Profiles of Advantaged vs. Disadvantaged Groups: Evidence of Motivational Stratification in the Digital Age



Qualitative Illustrations: A Mixed-Methods Integration Matrix

To move beyond isolated quotes, we constructed a mixed-methods integration matrix (Table 7). Rows represent contrasting groups identified in the quantitative analysis (e.g., urban high-SES vs. rural low-SES). Columns capture key qualitative themes from interviews and observations. This matrix directly links statistical patterns to lived experiences.

Table 7
Mixed-methods integration matrix: Quantitative profiles vs. qualitative themes

Group (quantitative profile)	Intrinsic motivation (M)	Perception of oral English	Digital tool use pattern	Parental involvement	Representative quote
Urban high-SES (Profile A)	3.52	"Fun, self-expression, real communication"	Exploration, creative use (vlogs, AI chat)	Co-use, encouragement	*"I like repeating lines from English vlogs. It feels like I'm really using the language."*
County medium-SES (Profile D)	2.95	"School subject, sometimes useful"	Task completion, assigned apps	Check homework	*"The app is for homework. I finish it then stop."*
Rural low-SES (Profile B/C)	2.45	"Exam requirement, chore"	Compulsory check-in, teacher monitoring	Uninvolved or unaware	*"Teacher checks our study minutes. If not finished, lose points."*

DISCUSSION

This study set out to examine the overall level and structural characteristics of junior high school students' English oral self-directed learning motivation in the digital age, with a particular focus on group differences across urban–rural divides, school types, and family SES. Using a large-scale mixed-methods design, we found that motivation is moderate but extrinsically dominated, and that significant motivational stratification exists. Below, we discuss these findings in light of existing theories, highlight the novel contributions of our extended analyses, and draw implications for policy and practice.

Overall Motivation: Moderate and Extrinsically Dominated

Our finding that overall motivation is at a moderate level (M = 3.21) and that extrinsic motivation significantly outweighs intrinsic motivation (M = 3.35 vs. 2.98) aligns with previous studies on Chinese junior high school students' English learning (You & Dörnyei, 2016). This pattern is likely shaped by the high-stakes examination system, particularly the zhongkao (high school entrance examination), where English listening and reading are heavily weighted but oral components are often marginal or absent. Consequently, oral practice, even when mediated by digital tools, becomes an instrument for test preparation rather than a communicative or enjoyable activity.

From the perspective of self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000), the dominance of external regulation (a type of extrinsic motivation) and the relatively low level of intrinsic motivation raise concerns for long-term engagement. Extrinsic motivation can certainly drive behavior, but it tends to be less stable and less conducive to deep learning than intrinsic motivation. Moreover, amotivation (M = 2.17), though low on average, showed significant variation across groups, suggesting that a non-trivial minority of students see little value in practicing spoken English digitally.

Motivational Stratification: More Than a Simple Gap

Confirmation and Extension of Group Differences

Consistent with our hypotheses and prior digital divide literature (van Dijk, 2020; Rodríguez-Camacho et al., 2024), we found that students from urban areas, key schools, and high-SES families reported significantly higher overall motivation, and especially higher intrinsic motivation, compared to their rural, ordinary-school, and low-SES counterparts. However, our study goes beyond merely replicating these gaps:

Nonlinear and interactive effects: The two-way ANOVA revealed a significant interaction between urban–rural status and SES. Rural low-SES students had extremely low intrinsic motivation (M = 2.45), which is notably lower than what would be predicted from the additive main effects. This compound disadvantage indicates that multiple layers of social inequality can accumulate, creating a "double jeopardy" for the most marginalized learners. Conversely, urban high-SES students enjoyed a synergistic advantage.

Net effects after controlling for confounders: The hierarchical regression showed that once SES and school type were accounted for, the direct effect of urban–rural status became non-significant. This important nuance suggests that the urban–rural gap is largely mediated by unequal distribution of family resources and school quality. In other words, it is not "ruralness" per se that reduces motivation, but the higher likelihood of low SES and poor school digital teaching in rural areas.

Effect size ranking: Family SES produced the largest effect on intrinsic motivation (η^2 = 0.068, medium-to-large), followed by school type (η^2 = 0.042), and then urban–rural (η^2 = 0.031). This ranking provides empirical guidance for resource allocation: interventions aimed at closing the motivational gap should prioritize low-SES students and ordinary public schools, even more than geographic location.

Qualitative Differences in Motivation Profiles

Perhaps the most novel contribution of our extended analysis is the identification of distinct motivation profiles via cluster analysis. While mean comparisons are informative, they can mask heterogeneity. We found that students are not simply arrayed along a single "high–low" continuum; rather, they cluster into four qualitatively different types. The fact that 58.3% of rural students fell into Type B (extrinsic dominant) while 35.2% of city students were Type A (dual high) demonstrates that the urban–rural and SES gaps are not merely quantitative but qualitative: disadvantaged students are systematically located in motivation profiles that lack intrinsic drive.

The Mixed-Methods Integration Matrix: Bridging Numbers and Narratives

The mixed-methods integration matrix directly maps quantitative profiles onto qualitative themes (perceptions of oral English, digital tool use patterns, parental involvement). This integration reveals a coherent ecosystem linking social background, meaning-making, and motivation.

For urban high-SES students (Profile A), oral English is perceived as a means of self-expression and authentic communication. They use digital tools in exploratory, creative ways and receive active parental support. This ecosystem fosters intrinsic motivation. In contrast, for rural low-SES students (Profile B/C), oral English is perceived as a school-mandated chore or an exam requirement. Digital tool use is limited to compulsory check-in activities monitored by teachers. Parents are either uninvolved or lack digital literacy. This ecosystem reinforces extrinsic compliance and inhibits intrinsic interest.

Theoretical Implications

The findings suggest that digitalization, rather than equalizing motivation, may inadvertently function as an "inequality accelerator". The digital divide has evolved into a state of "motivational calcification" and "structural exclusion": urban high-SES students use digital tools for self-expression and creative exploration, whereas rural low-SES students experience the same technology as "electronic shackles" for surveillance and compliance. When educational informatization focuses on hardware distribution and platform coverage, it inherently caters to an idealized "standard learner" with high digital and cultural capital. This singular technological logic strips marginalized learners of autonomy and enjoyment, producing a crowding-out effect on intrinsic motivation and hardening the psychological red line between social classes rather than dissolving it.

Practical Implications

Given motivational stratification, policy interventions must shift from "universal growth" to "precision compensation". Educational administrators should dismantle task-oriented digital models prevalent in rural schools and incentivize non-evaluative, generative digital tasks (e.g., digital storytelling, cross-cultural exchange) that foster student agency. Equity-oriented policies must move beyond "screen equity" toward "ecosystem equity": governments should mandate that digital service providers include low-anxiety, socially-incentivized learning modules tailored for low-SES families, and offer digital literacy workshops for rural parents to counteract disparities in digital capital, thereby supporting intrinsic engagement at home rather than mere extrinsic compliance.

Limitations and Future Research Directions

Several limitations should be considered: (a) causal inference is limited by the cross-sectional design; (b) generalizability beyond the Chinese context is unknown; (c) self-report bias may exist; (d) unmeasured variables (e.g., psychological traits, peer influences) were not included; (e) intervention research is needed to test practical strategies. Future research should design and rigorously test interventions aimed at shifting disadvantaged students from extrinsic-dominant to dual-high motivation profiles.

Concluding Remarks for the Discussion

In summary, this study provides robust evidence that junior high school students' English oral self-directed learning motivation in the digital age is not only moderate and

extrinsically dominated but also systematically stratified by family SES, school type, and, indirectly, urban–rural residence. By moving beyond simple mean comparisons to interactive effects, net effect estimation, effect size ranking, cluster analysis, and mixed-methods integration, we have shown that motivational inequality is qualitative, not merely quantitative. The largest and most persistent gap is in intrinsic motivation, which is precisely the type of motivation that drives long-term, self-determined learning.

CONCLUSION

This study provides a clear, evidence-based answer to two fundamental questions about junior high school students' English oral self-directed learning motivation in the digital age.

First, overall motivation is moderate and predominantly extrinsic, with intrinsic motivation lagging significantly behind. This suggests that current digital language learning environments, at least in the Chinese context, are more effective at enforcing compliance than at cultivating genuine interest.

Second, and more importantly, motivation is systematically stratified by urban–rural residence, school type, and family SES. Disadvantaged groups—rural students, those in ordinary public schools, and low-SES students—exhibit lower overall motivation and, crucially, much lower intrinsic motivation. They are more likely to see oral English as a chore or a test requirement, while advantaged peers are more likely to experience it as enjoyable and meaningful.

In a digital age that promises democratized learning, our findings sound a cautionary note: without deliberate equity-oriented pedagogical and policy interventions, digitalization risks hardening, rather than reducing, motivational inequality. Future research should test intervention strategies (e.g., gamified oral tasks, parent–child digital co-learning programs) designed specifically to boost intrinsic motivation among disadvantaged learners.

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