Holistic Language Learning: Implementing Authentic Assessment to Cultivate 4C Skills in Chinese University English Course

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Abstract: This study investigates the effect of authentic assessment in cultivating the 4Cs (Communication, Collaboration, Critical Thinking, and Creativity) among undergraduate students enrolled in the English language course. The escalating demand for graduates with a holistic skill set and the decay of conventional testing necessitates innovative assessment methods differentiated from conventional testing. The 4C skills play an imperative role in preparing students for the complexities of the contemporary workforce and demanding studying and working contexts. Therefore, the study sets the objective to examine the effect of authentic assessment that fosters the integration of 4C skills into the curriculum. The study employs a quasi-experimental design incorporating a quantitative data collection method to evaluate the effectiveness of authentic assessment. Authentic assessment is taken as an intervention in the experiment. The outcomes of the intervention demonstrated significant improvements in students' Communication, Critical Thinking, and Creativity, with no significant effect on Collaboration. The paper explores the implications of these findings. Recommendations are provided for educators to implement similar frameworks tailored to their specific contexts. The significance of the study lies in its potential to reshape assessment practices and produce graduates better equipped to meet the evolving demands of the professional landscape. The authentic assessment study offers a promising avenue for educators to cultivate the 4C skills essential for success in the modern world. This research contributes to the ongoing discourse on innovative assessment methodologies and their impact on undergraduate education.

1. Problem Statement

In the realm of education in China, traditional pen-and-paper tests are gradually transforming into more comprehensive assessment methods, aiming not only to evaluate learning outcomes but also practical skills. This shift reflects a growing emphasis on real-life relevance in assessments, prompting a surge in related studies.

However, a notable research gap exists in understanding the impact of assessments on students' 4C skills—critical thinking, creativity, communication, and collaboration—especially within the Chinese higher education landscape. Current assessment practices in Chinese institutions are often simplistic, monotonous, resource-intensive, and fall short in terms of effectiveness. Despite occasional adaptations, the test-oriented tradition prevails, perpetuated by cultural conservatism that resists changes in assessment attitudes among both teachers and students.

Authentic formative assessment strategies, such as feedback, self-assessment, peer assessment, and standards sharing, are underutilized across various education levels, with standardized tests remaining the predominant approach. Chinese students, shaped by collectivist societal norms, tend to interdependence and habitual dependence on teachers for learning, hindering the cultivation of essential 4C skills.

This research aims to address these gaps by exploring the impact of authentic assessment on students' 4C skills and uncovering challenges faced by teachers in adopting authentic assessment practices. The findings will contribute valuable insights to enhance the effectiveness of assessment methods in fostering holistic skill development among Chinese university students.

2. Literature Review

Authentic assessment evaluates students' real-world performance, showcasing mastery of knowledge and skills through tasks reflecting meaningful scenarios [1]. Aligned with genuine situations, it provides explicit evidence of skills, differentiating it from traditional tests [2]. This formative approach integrates assessment seamlessly into the teaching process, utilizing methods like portfolios and performance tasks for diverse and effective learning experiences [3]. Rubrics are pivotal, enhancing transparency, fostering creativity, and actively engaging students [4]. Research underscores the positive impact of authentic assessment tasks on student learning [5].

Essential for learning, the 4C skills—communication, collaboration, critical thinking, and creativity—are interconnected competencies crucial for personal development [6]. A 4Cs-based learning model significantly influences student outcomes across cognitive, psychomotor, and affective domains. Emphasizing these skills in teaching, educators are advised to integrate them into activities, such as using technology for communication and posing open-ended questions for critical thinking.

Authentic assessment is instrumental in developing learning skills and integrating well-designed activities to cultivate these skills. Reviews highlight its impact on student engagement, communication, collaboration, critical thinking, problem-solving, and confidence [7]. The integration of problem-based learning with authentic assessment significantly influences learning skills [8]. Authentic assessment, strategically implemented, positively influences student engagement, learning outcomes, and the cultivation of crucial 4C skills, as evidenced in the literature.

3. Research Design and Methodology

The research design employed in this study was a quasi-experimental approach utilizing an explanatory sequential mixed methods approach. The study encompassed the establishment of experimental and control groups, with authentic assessment designed as the intervention and administered solely to the experimental group. Authentic assessment tasks were designed and integrated into the English language course of the experimental group. Both pretest and posttest assessments were administered to both groups to gauge the impact of the intervention. The research unfolded over 14 weeks, encompassing the pretest, posttest, and the treatment process. A simple random sampling method was employed to select two intact classes from University A, among a

target population of approximately 1,500 students enrolled in the English course, forming the experimental and control groups.

Authentic assessment served as the treatment in the experiment. The treatment was administered to the experimental group for 8 weeks, and the control group followed the traditional instruction style during the same period. The research employed an instrument of a 4Cs questionnaire with 50 items in four dimensions. The instrument facilitated comprehensive data collection and analysis. The quantitative data from the questionnaire responses underwent normality and homogeneity tests, followed by independent-sample t-tests, paired-sample t-tests, and ANCOVA for inter-group and intra-group comparisons.

The research framed three quantitative questions, providing a comprehensive exploration of the study's objectives and hypotheses.

RQ1: Is there a significant difference between the experimental group and the control group in the 4Cs posttest?

RQ2: Is there a significant difference in the 4Cs scores between the pretest and posttest in the experimental group?

RQ3: Does authentic assessment have a significant effect on the 4Cs posttest when the 4Cs pretest is controlled for?

4. Findings

An independent samples t-test was conducted to compare the 4C skills post-test scores between the experimental group (N=40) and the control group (N=40). Additionally, the sub-constructs of 4Cs underwent independent samples t-tests to explore potential differences between the two groups. The results of the independent samples t-test revealed a significant difference in 4C skills between the control group and the experimental group ($p=.001$) in the posttest, indicating a significant difference in 4C skills between the two groups in the posttest. In addition, no significant differences were found in terms of communication ($p=.000$), collaboration($p=.001$), critical thinking($p=.001$), and creativity ($p=.001$) between the control and experimental groups in the pretest. Detailed results of the independent samples t-tests for 4C skills between the control and experimental groups in the posttest are presented in Table 1.

Table 1: Independent-sample t-test result

Construct	Group	N	Mean	SD	Std. Err. M.	Sig.
4C	CG	40	3.21	.62	.10	.001
	EG	40	3.59	.23	.04	
Communication	CG	40	3.11	.81	.16	.000
	EG	40	4.12	.58	. 11	
Collaboration	CG	40	2.20	.70	.26	.001
	EG	40	1.35	.79	.26	
Critical thinking	CG	40	3.29	.89	.27	.001
	EG	40	3.66	.42	.11	
Creativity	CG	40	3.31	.77	.17	.000
	EG	40	3.89	.67	.09	

A paired samples t-test was conducted to evaluate the within-group comparisons of the 4C skills between the pretest and posttest of the experimental group. The paired samples t-test results revealed a statistically significant increase of 4C skills in the experimental group ($p=.001$). Additionally, the sub-constructs of 4Cs underwent paired samples t-tests to explore potential differences between the pretest and posttest. A significant effect was shown with all subconstructs, with all p values lower than .05. The paired sample t-test result is presented in Table 2.

Table 2: Paired sample t-test result

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig.
					Lower	Upper			
4C	Posttest-Pretest	.31	.46	.07	.20	.59	4.31	39	.001
Com	Posttest-Pretest	.38	.54	.18	.21	.64	4.01	39	.001
Col	Posttest-Pretest	.30	1.10	.14	.07	.46	3.73	39	.002
CT	Posttest-Pretest	.46	.99	.14	.36	.86	3.94	39	.000
CR	Posttest-Pretest	.52	.97	.15	.31	.64	3.66	39	.000

Table 3 displays the test between the subject effect of 4C skills. When the pretest was taken as the covariate, the ANCOVA revealed a significant effect of AA on 4C in the posttest (p=.002).

Table 3: ANOCVA result

Source	Type III Sum of Squares	df	Mean Square	Sig.	Partial Eta Squared
Corrected Model	3.56	2	1.79	.003	.15
Intercept	4.32	1	3.36	.000	.16
4C-pretest	.32	1	.31	.318	.03
Group	3.25	1	3.33	.001	.09
Error	25.23	69	.44		
Total	836.25	80			

5. Discussion and conclusion

The research discovered that authentic assessment had a significant effect on 4C skills among undergraduate students when integrated into their English language course. The current study's findings align with prior research, providing consistent support for the positive impact of authentic assessment. Ridwan et al. previously demonstrated that the integration of authentic assessment in classroom instruction enhanced core learning skills [9], corroborating the findings of this study. This alignment is further emphasized by Sokhanvar et al.'s [7] systematic literature review, which explored the benefits of authentic assessment in enhancing the overall learning experience and comprehensive skills of undergraduate students. Building upon these foundational studies, Pohan and Ikawati [10] specifically validated the effectiveness of AA in promoting 4C skills, focusing on communication skills. By implementing an authentic assessment model, students engaged in tasks that required clear articulation of thoughts, adaptation of communication styles to diverse audiences, and refinement of presentation skills. This approach successfully elevated communicative competency among students, affirming the influence of authentic assessment on the skill of communication. Additionally, Adri et al. adopted a performance-based authentic assessment approach to stimulate students' critical thinking skills, mirroring the steps undertaken in the current study, including task design, formulation of authentic assessment rubrics, and self-assessment and teacher assessment [11].

From a different research perspective, Chusni and Suherman [12] designed an assessment tool that incorporated authentic assessment to measure critical thinking competency. Their results, based on multiple representations, underscored the suitability of authentic assessment for evaluating critical thinking, reinforcing the positive contribution of authentic assessment to this cognitive skill.

Notably, Syarifah and Emiliasari employed a qualitative method to analyze data and reached similar conclusions [13]. Their study focused on authentic assessment-based Problem-Based Learning (PBL) and its impact on narrative writing skills and creativity. The outcomes revealed that authentic assessment-based PBL facilitated the development of narrative writing skills and

creativity, showcasing various aspects such as understanding the topic, knowledge of the narrative genre, and the demonstration of creativity through storyline creation and illustration design. Additionally, students highlighted the positive aspects of authentic assessment-based PBL, emphasizing the improvement of creativity and the acquisition of skills such as networking, collaborative learning, and teamwork. Together, these findings affirm the consistent and positive influence of AA across diverse learning skills, reinforcing its value in educational settings.

Finally, a review of the literature and the results of this study confirm that authentic assessment fosters students' 4C skills in communication, teamwork, critical thinking, and creativity. These positive effects are supported by the alignment of authentic assessment with real-world scenarios, its emphasis on complex problem-solving, interdisciplinary engagement, knowledge application, integration of self-assessment methodologies, encouragement of student autonomy, support for collaborative learning, and integration of various communication modalities. These elements taken together contribute to the development of these vital skills, making authentic assessment an invaluable resource for educators and students alike.

Acknowledgment

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