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Research on the Evaluation of Red Cultural Identity among Higher Vocational College Students from a Learning Analytics Perspective —— A Case Study of Digital-Intelligent Teaching Centred on Shanghai Red Publishing Culture

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Abstract

The latent nature of red cultural identity makes conventional evaluation approaches, which mainly rely on final examinations, questionnaires and teachers' subjective impressions, inadequate for identifying the level at which students' identity formation has stalled. Drawing on digital-intelligent teaching practice themed on Shanghai's red publishing culture, this research operationalises red cultural identity into four dimensions: cognition, affect, values and behaviour. Process learning data are collected through knowledge-graph inquiry, virtual simulation, AI-assisted learning dialogue and project creation, forming a closed-loop framework of "data sensing — indicator calculation — intelligent diagnosis — feedback intervention". This framework was tested via a six-week digital research-and-learning programme on red publishing during the founding period of the Communist Party of China. Practice shows that improved evaluation validity does not hinge on algorithmic complexity but on two revisions: eliminating easily accessible but weakly explanatory indicators such as click counts and online duration, and acknowledging the limited validity of automated recognition for the affective and value dimensions while reserving interpretive authority for teachers. The evaluation of red cultural identity can be datafied, yet the right of interpretation should not be ceded to technical systems.

Keywords

Learning Analytics; Red Cultural Identity; Higher Vocational Colleges; Digital-Intelligent Teaching; Educational Evaluation

1. Statement of the Problem

The reform of ideological and political courses requires connecting classroom content with social reality[1]. When applied to red cultural teaching in higher

vocational colleges, three specific criteria come into play: whether historical facts are thoroughly grasped, whether the predicaments of historical figures are genuinely understood, and whether the spirit embodied in them can be translated into a sense of propriety in students' future conduct. None of the three can be assessed through written examinations.

Shanghai has a well-documented lineage of red publishing with verifiable historical traces. *New Youth* was first printed by Qunyi Book Society in September 1915 and renamed in September the following year. *The Communist*, a monthly journal edited by Li Da, was founded in November 1920 under the threat of suppression, with no editorial or distributing institution marked on its copyright page. In April 1920, Chen Wangdao finished translating *The Communist Manifesto* in a woodshed at Fenshuitang, Yiwu. The translated text was published by the Shanghai Socialist Research Society in August, with an initial print run of 1,000 copies that quickly sold out[2]. At that time, terms such as "class", "society" and "capital" were mostly newly coined loanwords; how these terms were rendered directly determined how much readers could understand[3]. These episodes have their own people, texts and spatial coordinates, and are therefore not difficult to turn into digital scenarios. The core question — for whom books are produced, what content they carry, and what responsibilities publishers bear — also aligns closely with the professional ethics that students majoring in publishing and media will uphold in their careers. Shanghai has enacted local legislation to protect and utilise red resources[4].

The weakest link lies in evaluation. Most ideological and political courses calculate total scores based on final grades, reflection essay word counts and attendance rates. Such scores only reflect memory retention and class attendance. Massive records of clicks and viewing histories have long accumulated on learning platforms yet remain unused. Teachers neither know how to put them to use nor can tell which students misunderstand a passage of history, who remain emotionally untouched after hearing a historical narrative, or who could have done better yet fell behind halfway. This form of evaluation suffices for administrative assessment but cannot support instructional improvement.

Learning analytics measures, collects, analyses and reports data about learners and their contexts to understand and optimise learning and its environments[5]. To apply it to identity evaluation, indicators must be carefully defined: what constitutes genuine cognitive mastery versus simple memorisation; which behaviours serve as valid evidence and which merely offer clues. Poorly specified indicators amplify bias as data volume grows. The Action Plan for Education Informatization 2.0 has proposed fully exploring artificial intelligence and big data to support instructional decision-making[6]. Technical maturity is not the bottleneck.

2. Four-Dimensional Structure and Indicator Design for Red Cultural Identity Evaluation

Identity is not equivalent to knowledge. A student who can recite the publication year of the first complete Chinese translation of *The Communist Manifesto* is not the same as one who understands why some people took the risk of printing the book. The former can be tested in examinations, while the latter can only be gradually revealed through discussions, creative works and in-depth questioning. The effectiveness of ideological and political education is embodied in the transformation from knowledge to belief[7]. Accordingly, the research team decomposes identity into four dimensions: cognition, affect, values and behaviour. Instead of summing four separate scores, the framework gathers four categories of mutually corroborating evidence.

The cognitive dimension assesses the accuracy of historical facts, coherence of concepts, continuity of historical context and, more importantly, the capacity for explanation. Rather than rigidly testing the founding date of a journal, the evaluation examines whether students can articulate the intellectual shifts among intellectuals behind *New Youth*'s transformation from a literary journal to a platform for Marxist propagation, and explain why Shanghai of that era became the core site for ideological enlightenment and revolutionary dissemination through publishing. They should also be able to analyse how the foreign concessions, the cost of lithographic and letterpress printing, and the literacy rate of readers jointly determined how long a periodical could survive. Only when students can explain at this level have the historical facts been put back into their era.

The affective dimension cannot be measured via examinations. Traditional assignments requiring "learning reflections" often yield generic statements such as "I was deeply moved", lacking concrete details. The research found that genuinely engaged students voluntarily reference minor historical details in discussions, imagine themselves in the position of editors of the era, and wonder what state of mind Chen Wangdao was in when he dipped his zongzi, a kind of glutinous rice dumpling, in ink while translating. Empathy shows itself in the density of detail: the ability to sense what those people held in their hearts when, caught between two hard choices, they took the hardest road. Judgement is based on the specificity of textual accounts rather than the intensity of emotional adjectives.

The value dimension examines whether students can make connections between red publishing values and their future professional practice. The red publishing ethos of "publishing for the people", "upholding truth and integrity" and "cultural practitioners assuming social responsibility" overlaps with professional ethics for media students. Cases such as Life Bookstore persisting in publishing during the War of Resistance against Japanese Aggression and Zou Taofen keeping to the mission of his journals despite repeated exile are more persuasive than any list of principles. Evaluation does not test whether students can recite value statements, but how they judge concrete scenarios. For instance, if they were working as a new-media editor and came across a topic that would draw heavy traffic yet is questionable in content,

would they publish it or not, and on what grounds? There is no single standard answer; their reasons reveal which principle they put first.

The behavioural dimension observes external performance: whether students speak voluntarily, contribute substantively to group projects, complete works conscientiously, and share learnings with others after class. Caution is required here. High click rates and active participation in discussions do not equate to identity; works may be technically polished and visually striking yet hollow in content. Behavioural data provides vital clues but cannot serve as sole evidence.

Two things are decisive in indicator design: every indicator corresponds to solid data rather than a score assigned by impression, and every indicator can be used by any ordinary ideological and political teacher, not only by technical specialists. Therefore, the cognitive dimension links historical fact accuracy, conceptual connection completeness, learning path coverage and quality of explanatory responses. The affective dimension primarily relies on the density of cited historical materials in reflections and discussions, specificity of emotional accounts, and depth of follow-up questions. The value dimension evaluates alignment between arguments and historical facts and the transfer of insights to professional contexts. The behavioural dimension mainly tracks task completion rate, collaborative contribution, number of work iterations and post-class knowledge dissemination. Weights are flexible: cognitive weight rises when the focus of learning is on sorting out historical facts; behavioural weight increases during practical projects.

Qualitative assessment complements quantitative data. Classroom observation, post-class conversations and line-by-line appraisal of student works are irreplaceable for identifying genuine student engagement.

3. Data Generation and Embedded Evaluation in Teaching Scenarios

If evaluation is separated from teaching and conducted as a standalone test, collected data merely reflects exam-oriented performance. Evaluation should be embedded into routine instruction rather than appended after teaching concludes. Shanghai's abundant red publishing heritage, dominated by textual materials with concrete scenarios and inherent communicative attributes, lends itself to three types of activity: inquiry, experience and creation.

In knowledge-graph tasks, students independently connect nodes of figures, periodicals and events to map the lineage of red publishing and its dissemination. The backend records navigation paths, dwell time on historical materials, transitions from *New Youth* to *The Communist Manifesto*, and response errors to support cognitive assessment. If students in a class move almost exclusively between figure nodes and rarely enter nodes for periodicals, institutions and events, we may infer they have not established an understanding of the relationships among "text — readers — organisations".

In the virtual simulation module, students may assume roles as progressive editors, proofreaders or underground distributors, tasked with producing and distributing journals under conditions of imminent police raids, limited paper rations and distribution restricted to trusted contacts. Role selection, decision-making amid challenges and post-task reflections are used to gauge affective experience and value judgement. Some groups chose to suspend publication for one issue to evade crackdowns, and their reflections noted: "We initially viewed this as compromise, yet further research revealed this was standard practice at the time." Such self-correction is more valuable than the conclusion itself.

AI-assisted learning dialogue captures student questions. There is a marked difference between surface-level enquiries such as "In which year did this event happen?" and deeper questions such as "What drove these people to run periodicals at the risk of execution?". Question hierarchy, depth of inquiry and dialogue content serve as evidence for cognitive depth and emotional authenticity.

In project creation, students produce oral-history micro-videos, edit short videos and build online exhibitions. Iteration counts, peer feedback within groups and final products best reflect the depth of value comprehension and practical engagement. Discussion records in group chats also reveal silent members and active contributors.

The collected data can be analysed at four layers. The behavioural layer includes login records, learning duration and click data. The cognitive layer covers test results, concept maps and open-ended responses. The affective layer draws from discussion posts and reflective texts. The outcome layer contains creative works, teacher comments and peer assessment. The behavioural layer is easiest to obtain yet most prone to misinterpretation: a student may leave the page open while browsing short videos elsewhere, logging two hours of study time without reading a single word. The outcome layer is hardest to quantify yet closest to educational goals. All data must be assessed by its relevance to educational objectives.

Ethical boundaries must be upheld throughout. Data collection is confined strictly to teaching activities, adhering to the principles of minimum necessity and prior informed consent. Facial recognition, voice sentiment analysis and location tracking are excluded without clear instructional necessity. Before the course starts, students are fully informed about what data will be collected and its purposes. This also has some effect on data accuracy: some students, in order to cooperate with data collection, engage in a degree of concealment. The effect can be reduced by assigning credibility weights.

Embedded evaluation does not aim to rank students but to improve the competencies that matter. If most students repeatedly struggle with the same learning node, the problem likely lies in instructional design rather than individual learners. If only two or three students speak in group discussions over a long period, the division of labour mechanism requires immediate adjustment.

4. Operating Mechanism of the Evaluation Closed Loop

The closed loop consists of sensing, calculation, diagnosis, presentation and intervention. The first two stages rely on technology, while the latter three depend on teachers' professional judgement. The latter stages are most vulnerable to breakdown in real practice.

The first challenge is platform interoperability. Ideological and political education platforms, virtual simulation systems, assignment systems and extracurricular (second-classroom) activity records operate independently with separate accounts, making it impossible to assemble complete learner profiles. The team adopted a rather crude but workable approach: first list the data that evaluation needs, then connect the systems according to that list and leave out anything not on it. Reversing this sequence typically yields large volumes of useless data, consuming storage and maintenance resources.

The calculation stage translates behavioural data into educational information. Ten discussion posts from a student do not inherently signal identity level; yet sustained three-layer follow-up questioning on the same historical evidence indicates genuine reflection. Text-based data should not be handed over entirely to automated scoring; it requires manual annotation and calibration to avoid equating long essays with profound thinking or slogan-laden language with authentic identity. However, manual annotation is labour-intensive: annotating one reflection post takes several minutes, which translates to hours of work for a single class. Some schools therefore give up on this practice and, to save trouble, simply use the system's default scores.

Diagnosis can integrate multiple approaches. Learning path analysis examines the integrity of cognitive structures; textual analysis identifies hollow reflections; social network analysis detects marginalised group members with limited speaking opportunities; clustering groups students of similar proficiency for targeted stratified tutoring; value-added analysis measures student progress against their prior performance rather than cross-student comparison.

These methods merely generate clues. When the system flags low participation for a student, the underlying cause may be disinterest in the history content, unstable home internet, difficulty reading long texts, or exclusion from group discourse. Systems cannot distinguish these possibilities; teachers must interview students and review prior assignments to uncover root causes.

Final reporting avoids ranking students by composite scores. Student-facing profiles describe strengths across dimensions, recent progress and recommended next steps. The class view for teachers shows where the whole class is generally blocked at a given knowledge point and which dimension is weak across the board, so that common problems can be grasped.

Interventions are designed based on data diagnosis. For weak foundational historical knowledge, supplementary historical materials and background explanations are provided with mind-mapping exercises to reinforce comprehension. For insufficient immersion and weak affective experience, detailed stories and immersive scenarios

are added, or related stories with greater emotional force are supplied. For students who can recite the red spirit but turn vague the moment they face reality, authentic ethics cases from the media industry are introduced for discussion, together with more practical content, so that understanding grows through practice. For low behavioural engagement and insufficient motivation, more hands-on creative tasks, presentation opportunities and community outreach activities are arranged. Only when data translates into concrete instructional adjustments does learning analytics fulfil its educational mission.

5. Practical Testing and Improvement Pathways

This research implemented a six-week digital research-and-learning project titled "Red Publishing Culture in the Founding Period of the CPC" within practical teaching of higher vocational ideological and political courses. Pre-course cognitive assessments and interest questionnaires were completed, and the platform generated initial learner profiles on which teachers based their grouping. During the course, students explored how Shanghai's modern publishing industry became a core site for Marxist dissemination, then entered virtual simulation to complete planning, proofreading and distribution schemes for progressive periodicals in assigned roles. After class, each group submitted digital works scored on ideological substance, historical accuracy, creativity, communication impact and collaboration. Outstanding works were exhibited on the campus ideological and political platform.

Four types of changes were observed after one round of teaching implementation. First, regarding knowledge comprehension: many students initially regarded red publishing as isolated anecdotes of famous figures without grasping the mutual influences linking periodicals, readers, Party organisations and social environments. Logical coherence improved after cross-text comparison and contextual mapping activities. Second, regarding empathy: many students had strong emotional reactions to stories such as Chen Wangdao dipping his zongzi in ink, or Chen Duxiu founding *Youth Magazine*, yet expressed vague ideas in value discussions, showing that experiential feelings had not yet solidified into judgements. Subsequent guided questioning and joint discussion of media predecessors' commitment to factual integrity helped ground their emotional responses. Third, regarding participation: some students spoke rarely in groups at first. After dividing tasks into non-substitutable individual responsibilities, their participation rose markedly. Fourth, regarding learning outcomes: students excelled at formal innovation, producing polished short videos with special effects yet shallow interpretations of red culture. This indicates ideological guidance must precede creative production.

While the earlier teaching evaluation produced clear results, several implementation challenges remain. First, inconsistent data standards across platforms prevent full automatic linkage between decision-making data in virtual simulation and work data from assignment systems. End-to-end evaluation remains incomplete, and much data

requires manual collation by teachers. Second, indicator design took a wrong turn at first. Click volume and online duration were originally treated as evidence of identity, but after one round of teaching it became clear that such data had almost nothing to do with value judgement, and the whole category was deleted. Third, AI's capacity to recognise affect and values is limited. Text analysis can identify positive or negative sentiment but cannot distinguish genuine reflections from online template content. Fourth, data collection boundaries were unclear at the outset. Some students worried their chat records would be accessed, and trust was restored only after clarifying the rules in class meetings.

Improvement measures are concentrated in four areas. Indicators must be tightly aligned with educational goals; any metric that fails to demonstrate genuine student growth is eliminated. Evaluation shifts its focus to process and value-added progress, reducing ranking of students against one another, consistent with the *Overall Plan for Deepening the Reform of Educational Evaluation in the New Era*[8]. Data collection abides strictly by minimum necessity, with clear protocols specifying permissible and prohibited data types. Frontline ideological and political teachers receive training in data literacy to interpret diagnostic outputs alongside pedagogical experience. The national *Teacher Digital Literacy* standard has already listed data analysis as a professional competency[9]. In addition, it is planned to bring media-industry mentors, venue docents and community-practice supervisors into the evaluation, so that conclusions come closer to performance in real settings.

6. Conclusion

The primary value of this framework lies in rendering observable and analysable the scattered process evidence from diverse teaching activities previously inaccessible to teachers, in turn supporting instructional improvement. It does not replace teachers with technology but helps teachers better understand students. Shanghai's red publishing culture, with abundant primary historical materials, vivid scenarios and inherent communicative traits, serves as a suitable testbed for evaluation reform.

Its limitations should also be acknowledged. The four-dimensional framework and indicator set are derived from literature and two years of teaching experience without large-sample validity testing. The project ran for only six weeks in elective classes at one institution, so the long-term stability of identity changes cannot be confirmed. The calibration sample for textual analysis is small, and the weighting is largely experiential. Further implementation across more majors and over longer cycles is required to stabilise the indicators.

A critical distinction remains: data records learning traces, yet recording is not judgement. Technology can flag problems, but teachers must determine the type and intensity of guidance by combining classroom impressions, work details and one-on-one conversations. The ultimate aim of red cultural identity evaluation is not to produce a handsome score, but to help students form a value identity that can

stand the test of time.

References

[1] General Office of the CPC Central Committee, General Office of the State Council. Opinions on Deepening the Reform and Innovation of Ideological and Political Theory Courses in Schools in the New Era[Z]. 2019.

[2] Fang Hanqi. *A Comprehensive History of Chinese Journalism, Volume 2*[M]. Beijing: China Renmin University Press, 1996.

[3] Feng Tianyu. *Exploring New Terms: The Generation of Modern Chinese Terminology in Sino-Western-Japanese Interactions*[M]. Beijing: Zhonghua Book Company, 2004.

[4] Standing Committee of the Shanghai Municipal People's Congress. Regulations on the Inheritance, Promotion, Protection and Utilization of Red Resources of Shanghai[Z]. 2021.

[5] SIEMENS G. Learning analytics: the emergence of a discipline[J]. *American Behavioral Scientist*, 2013, 57(10): 1380-1400.

[6] Ministry of Education of the People's Republic of China. Action Plan for Education Informatization 2.0[Z]. 2018.

[7] Shen Zhuanghai. *Research on the Effectiveness of Ideological and Political Education*[M]. Wuhan: Wuhan University Press, 2001.

[8] CPC Central Committee, State Council. Overall Plan for Deepening the Reform of Educational Evaluation in the New Era[Z]. 2020.

[9] Ministry of Education of the People's Republic of China. Teacher Digital Literacy: JY/T 0646—2022[S]. 2022.