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EMBEDDING PROFESSIONAL ETHICS AND SAFETY RESPONSIBILITY IN AVIATION LAW EDUCATION: A CASE-BASED CURRICULUM DESIGN IN CHINESE HIGHER EDUCATION

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Abstract: Aviation law education for safety-critical professions must develop more than recall of regulations: graduates also need to reason about legal duties, public safety and professional responsibility. In China, curriculum-integrated ideological and political education encourages these values-related aims to be addressed within disciplinary courses, but published accounts rarely show how objectives, classroom tasks and assessment evidence are aligned. This study presents a practice-oriented curriculum design for an undergraduate Aviation Law course taught to air traffic management students at the Civil Aviation Flight University of China. Using documentary analysis of the course objectives, syllabus and teaching materials, the authors decomposed the objectives into three outcome domains, mapped eight chapters, grouped into six modules, to twelve teaching cases and their values-related themes, and reconstructed a four-stage lesson on search and rescue and accident investigation built around the disappearance of Malaysia Airlines flight MH370 and the 2010 Yichun accident. The design links legal knowledge, regulatory reasoning and ethical judgement through aligned objectives, a module–case matrix, a four-stage lesson sequence, four implementation strands and a five-dimensional rubric for assessing regulation-informed professional judgement. No learner-outcome data were collected, so effectiveness is not claimed; an evaluation using independently rated case responses is proposed. The framework offers a transferable template for safety-critical professional programmes.
Keywords: Aviation law education; Curriculum design; Professional ethics; Case-based learning; Safety responsibility

1 INTRODUCTION

1.1 Policy Context and the Aviation-Law Problem

Education for safety-critical professions must join technical knowledge with the ability to interpret responsibilities, anticipate consequences and justify decisions. In civil aviation, the legal framework establishes not only what an operator or organisation may do, but also the limits within which safety-related judgement is exercised. For undergraduates preparing for careers in air traffic management and related occupations, aviation law is therefore a bridge between formal rules and professional conduct. The regulatory system is extensive: on the basis of the Chicago Convention and its 19 Annexes, a 2019 account described the Chinese system as comprising one law, 30 administrative regulations, 185 departmental rules, 226 advisory circulars and 115 management procedures [1]. Knowing the rules is nevertheless not sufficient. It has been argued that most unsafe behaviour in the industry arises not from misunderstanding of the rules but from disregard for them [2]. A course that concentrates on definitions and isolated clauses may leave students able to recite a provision but unable to explain why it matters in an operational context, or how to act when rules, time pressure and uncertainty collide.

Since 2016, Chinese higher education has increasingly encouraged the integration of values education into disciplinary courses rather than leaving ethical formation to stand-alone political theory classes [3-4]. The policy label ‘curriculum ideological and political education’ (kecheng sizheng) describes this approach, and the 2020 national guidelines call for ideological and political education to run through the talent-cultivation system [5]. For an international readership, this policy provides institutional context for the present case, not evidence that any particular intervention improves student outcomes.

English-language case studies of curriculum-integrated values education have also been reported in other disciplines, including English linguistics [6]. The present article focuses on how objectives, classroom tasks and assessment evidence can be aligned in a safety-critical professional course.

1.2 Values Education and Professional Formation

Professional education develops habits of interpreting situations, identifying constraints and acting responsibly. Shulman described ‘signature pedagogies’ as the characteristic ways in which professions prepare novices to think, perform and act with integrity [7]. In the legal professions, the Carnegie study of legal education likewise distinguished a cognitive apprenticeship in legal analysis, a practical apprenticeship in professional performance and an apprenticeship of identity and purpose, and argued that the three should be taught together [8]. Aviation law education has similar potential: a

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regulatory text is a resource for making defensible choices under institutional and safety constraints, not only a body of information to memorise.

Safety science supplies further concepts. The ICAO Safety Management Manual emphasises system-level safety responsibility and the importance of organisational context [9]. Reason's account of organisational accidents locates many failures in latent conditions rather than in individual error alone [10], and Dekker's work on just culture argues that organisations must balance learning with accountability instead of treating every adverse outcome as an occasion for blame [11]. These strands matter pedagogically because they give students a vocabulary for distinguishing the purposes of rules, investigations and sanctions.

For an international audience, 'value formation' and 'civic responsibility' require careful distinction. The Chinese policy framework gives explicit attention to ideological and political education, whereas the elements foregrounded in this course concern lawful conduct, accountability, public safety and respect for life, which connect directly to occupational decision-making. UNESCO's global citizenship education framework distinguishes cognitive, socio-emotional and behavioural learning domains [12]; it serves here as a comparative lens, not as an assertion that the Chinese policy categories are identical to UNESCO's.

1.3 Learning Alignment and Case-Based Inquiry

Constructive alignment proposes that intended learning outcomes, learning activities and assessment tasks should support the same kinds of understanding and performance [13]. For aviation law, an outcome such as 'identify the legal basis of search and rescue' can be assessed by correct identification of provisions, whereas 'justify a safety-related decision' requires a scenario task with reasons, limits and alternative actions. Keeping both outcomes visible reduces the likelihood that ethics content becomes an isolated motivational statement detached from academic assessment.

Experiential and situated learning theories provide a further rationale for authentic professional scenarios: Kolb describes a cycle linking experience and reflection [14], and Lave and Wenger locate learning in participation in social practice [15]. Case discussion does not replicate the workplace, yet it can require novices to adopt the perspectives of different professional actors. Reviews of active learning indicate advantages of student engagement over passive reception while showing that the quality and conditions of implementation matter [16-17], and a systematic review in health professions education reports generally favourable but methodologically varied evidence for case-based learning [18]. Such evidence supports a reasoned design choice; it does not demonstrate the effectiveness of the particular course intervention described here.

1.4 Research Gap, Aim and Questions

Previous Chinese discussions of aviation-law-related courses have offered examples of case-based values education, online–offline teaching resources and thematic course reform [1-2, 19-20]. The design challenge that remains is to show how objectives, instructional tasks and assessment evidence can be aligned in one specialised course without treating professional ethics as an unrelated addition to technical teaching. The central proposition of this article is that values-related learning is more credible when students must analyse legal duties, explain competing responsibilities and revise their positions in the light of evidence, rather than endorse a predetermined conclusion.

The article therefore offers a design-based account of how such integration can be organised in the undergraduate Aviation Law course at the Civil Aviation Flight University of China. It asks three practical questions. RQ1: How can disciplinary learning objectives be connected with professional responsibility and ethical judgement? RQ2: How can aviation incidents be used as structured legal-inquiry tasks rather than as merely illustrative stories? RQ3: What forms of formative evidence could support evaluation of both legal understanding and values-related reasoning? The contribution is a documented curricular framework, a module–case matrix, a transferable lesson sequence and an assessment rubric, not a causal estimate of teaching effectiveness.

2 MATERIALS AND METHODS

2.1 Study Design and Course Context

This is a practice-oriented curriculum design study with an illustrative teaching case. It is not a quantitative experiment, survey or effectiveness evaluation. The setting is the undergraduate Aviation Law course, a professional foundation course in the transportation programme of the Civil Aviation Flight University of China (CAFUC), taught in the School of Air Traffic Management. The course covers the international convention systems of aviation law and the rules of the International Civil Aviation Organization (ICAO) and the Civil Aviation Administration of China (CAAC) on aviation personnel, aircraft and airworthiness management, airport construction and management, air navigation, search and rescue, and accident investigation. Its stated purpose is to make students familiar with domestic and international aviation laws, regulations and operating rules and with the vertical and horizontal relations among them, and to develop their ability to apply regulatory knowledge to analyse and solve problems, while fostering rule awareness, red-line awareness and a strong sense of safety responsibility.

2.2 Sources and Analytical Procedure

The analysis draws on the authors' own teaching documents for the course: (a) the statement of course objectives; (b) the eight-chapter syllabus; (c) the inventory of teaching cases, with the values-related themes assigned to each chapter group; (d) the detailed lesson plan for the chapter on search and rescue and accident investigation; and (e) the scheme for implementing values-related teaching across the course. The materials were written in Chinese and were translated by the authors; policy terms are given in pinyin at first use.

Four analytical steps were applied. First, the stated course objectives were decomposed into outcome domains. Second, the eight chapters were grouped into six thematic modules, and the cases and legal content attached to each module were tabulated. Third, the values-related themes attached to each module were translated, tallied and grouped by the authors, on interpretive grounds, into three families: identity and institutions, legal and rule orientation, and safety and responsibility. Fourth, the lesson plan and the implementation scheme were reconstructed as stage-by-stage sequences, and an assessment rubric was derived by applying the alignment principle to the stated outcomes [13]. The groupings and the rubric are interpretive curricular syntheses, not empirically validated measurement instruments.

2.3 Selection of the Illustrative Case

The search-and-rescue and accident-investigation unit, the eighth chapter of the course, was selected because it has the most fully documented lesson plan and brings together three themes central to the course: duties under uncertainty, the purposes of investigation and rule-based decision-making. The disappearance of Malaysia Airlines flight MH370 on 8 March 2014 allows learners to examine why a search may continue when information is incomplete, how responsibilities are distributed between search and investigation, and why uncertainty matters in emergency decisions. Teaching materials can draw on the official Malaysian safety investigation report and on the Australian Transport Safety Bureau's report on the operational search [21-22]. A domestic case, the accident of Henan Airlines flight 8387 at Yichun on 24 August 2010, is used for situated judgement by controllers and flight crew. These cases are educational prompts; the article does not undertake a new factual investigation of either event, and instructors must verify case records and applicable legal provisions before teaching.

2.4 Evidentiary Boundary and Ethics

The terms 'results' and 'implementation' in this article refer to the products and procedures of curriculum design. The source materials contain no class sizes, intervention dates, pre-test and post-test results, student interviews or independently coded classroom observations, and none are reported here. Only course documents were analysed; no student data were collected, so no participant consent procedure was required. Claims about learning gains, changed values or improved safety outcomes are therefore not made, and proposals for evaluation are confined to the Discussion.

3 RESULTS

3.1 Alignment of Knowledge, Judgement and Responsibility

The first output is a three-domain objective structure (Table 1, Figure 1). The course design distinguishes knowledge and ability objectives, comprising an engineering-knowledge objective and a problem-analysis objective, from a values objective. These were restated as three outcome domains: legal knowledge and regulatory literacy, analytical competence and professional judgement, and ethical and safety responsibility. Knowledge outcomes require students to recognise the sources, scope and hierarchy of aviation rules. Analytical outcomes require identification of relevant provisions, regulated and regulating parties, decision constraints and the consequences of alternative actions. Responsibility outcomes concern the capacity to explain why legal compliance, respect for human life and accountable professional conduct matter in concrete scenarios. The values objective in the original course design also contains policy-specific political aims, which lie outside the scope of this article; the analysis here concentrates on professional ethics and safety responsibility, which can be expressed as observable reasoning.

Table 1 Course Objectives Restated as Three Outcome Domains

Outcome domain	Source in the course design	Intended outcome expressed as observable reasoning
Legal knowledge and regulatory literacy	Engineering-knowledge objective: understand the domestic and international regulatory system and the relations among its instruments; use the definition, development, sources, characteristics, structure and functions of aviation law to identify applicable rules and constraints and to weigh rights and obligations	Identifies the sources, scope and hierarchy of aviation rules; determines which instrument applies to a given actor or situation
Analytical competence and professional judgement	Problem-analysis objective: analyse and evaluate the rights and responsibilities of the parties concerned, considering the purpose, procedure, regulated and regulating parties of a rule; judge requirements from a holistic, whole-life-cycle perspective; assess strengths and limits and propose improvements	Connects a rule to a specific actor, decision and consequence; compares alternative actions; proposes and justifies improvements

Outcome domain	Source in the course design	Intended outcome expressed as observable reasoning
Ethical and safety responsibility	Values objective (professional-ethics components): professional ethics and legal literacy; rule awareness and red-line awareness; a strong sense of safety responsibility; reverence for life, duty and regulations; a truth-seeking attitude and willingness to take responsibility	Explains why compliance, respect for human life and accountable conduct matter in concrete scenarios; recognises the limits of authority and the role of uncertainty

Because every module is linked to all three domains, and every domain is paired with a form of instruction and a form of evidence, values-related learning is not assigned to a single lecture. An international aviation law module, for example, can connect legal status and institutional responsibilities to questions of cooperation; an airworthiness module can connect the purpose of technical standards with engineering accountability; and a search-and-rescue module can examine obligations under uncertainty. These links preserve the legal-content focus of the course while enabling reasoned discussion of professional conduct.

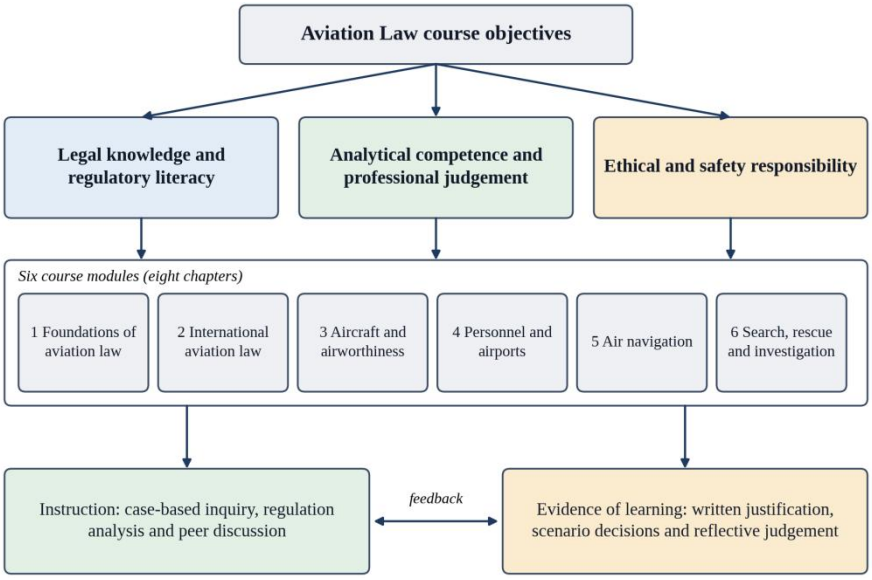


Figure 1 Constructive Alignment of Course Objectives, Outcome Domains, Modules, Instruction and Evidence of Learning

The double arrow indicates that assessment evidence informs the next cycle of instruction.

3.2 Module–Case Matrix and Distribution of Values Themes

The eight chapters were grouped into six modules: foundations of aviation law (the introductory chapter); international aviation law (the Chicago Convention system, ICAO and its technical regulations, and the Warsaw system and air criminal law); aircraft and airworthiness; aviation personnel and airports; air navigation; and search, rescue and investigation. Table 2 sets out the 12 teaching cases attached to these modules, together with the legal focus and the intended professional-responsibility outcome of each. Case labels are kept at a general level; in teaching, instructors should supply vetted historical or official records.

Table 2 Aviation Law Modules, Example Cases and Intended Learning Outcomes

Course module	Case or learning context	Legal and analytical focus	Professional-responsibility outcome
1. Foundations of aviation law	The Feng Ru No. 1 flight of 1909, a milestone in Chinese aviation history; the 1949 ‘two airlines’ uprising that laid the basis of the new civil aviation; the 2002 restructuring of Chinese civil aviation	Sources and brief history of aviation law; scope and function; definition and characteristics; domestic and international systems and their links	Explains how lawful aviation development entails public obligations and professional service
2. International aviation law	China’s election as a Category I member of the ICAO Council and its background; origin of the civil aviation work policy and the development of aviation law; civil aviation cooperation under the Belt and Road Initiative	Three convention systems and five major conventions; main ICAO organs and functions; the 19 Annexes, their legal status and the role of air navigation procedures	Differentiates state responsibilities, international cooperation and rule-based decision-making

Course module	Case or learning context	Legal and analytical focus	Professional-responsibility outcome
3. Aircraft and airworthiness	Airworthiness directive issued in China after the Boeing 737 MAX problems; design, manufacture and test flights of the C919 and ARJ21 as an account of China's large-aircraft programme	Aircraft classification, nationality and registration marks; definition, methods, phases and responsible authorities of airworthiness management	Justifies why technical integrity and independent compliance protect the travelling public
4. Aviation personnel and airports	An in-flight emergency handled by the crew of Sichuan Airlines flight 3U8633	Rights and duties of the pilot-in-command; basic content of personnel management; airport classification, construction and management; operating minima, obstacle protection and airport closure	Identifies accountable conduct and explains priority-setting under safety pressure
5. Air navigation	Legal basis for the exercise of state sovereignty in national airspace; concept and application of air defence identification zones	Main content of the Basic Rules of Flight of the People's Republic of China; interpretation of the editions cited in the course materials, including CCAR-93-R5 and CCAR-121-R5	Articulates compliance, law-based governance, public safety and scope-of-authority considerations
6. Search, rescue and investigation	Disappearance of MH370 (2014); Yichun accident (2010)	Units, duties and general procedures for search and rescue of civil aircraft; purpose and general procedure of accident investigation	Distinguishes evidence-based investigation from blame and explains duties arising from respect for life

The course design attaches 17 values-related tags to the six modules, representing 14 distinct themes (Figure 2). Three themes recur: sovereignty awareness (modules 1 and 2), rule-of-law awareness (modules 2 and 6) and responsibility awareness (modules 4 and 6). When the themes are grouped into the three families described in Section 2.2, a clear pattern appears. All eight identity-and-institution tags fall in modules 1–3, together with one rule-orientation tag, whereas modules 4–6 carry four legal-and-rule tags and four safety-and-responsibility tags and no identity tags. The design thus moves from institutional and professional identity in the foundational modules towards operational duty and rule observance in the modules closest to practice. Module 6, the focus of the illustrative lesson, carries three rule-related tags (rule-of-law, rule and red-line awareness) alongside responsibility awareness.

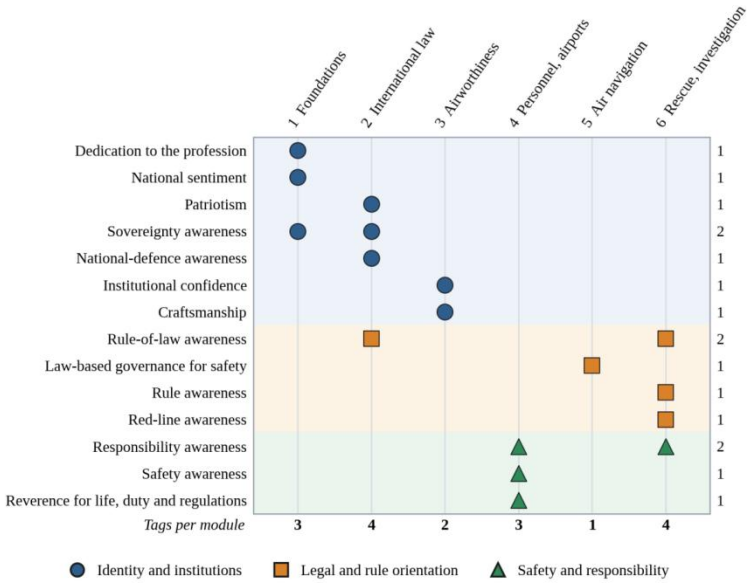


Figure 2 Distribution of Values-Related Themes across the Six Course Modules

A marker indicates that a theme is attached to a module in the course design. Numbers on the right give the number of modules to which each theme is attached; numbers at the bottom give the number of theme tags per module. The grouping into three families is the authors' interpretive coding.

3.3 Illustrative Teaching Sequence: Search and Rescue and Accident Investigation

The original lesson plan describes four successive stages, labelled course introduction, knowledge instruction, values introduction, and summary and consolidation. In the reconstructed sequence they are named orientation, legal inquiry, ethical deliberation, and transfer and reflection, to make the intended student activity explicit (Figure 3).

In the orientation stage, the instructor recalls the preceding unit on air navigation, introduces the national and international rules on search and rescue and accident investigation, and presents the 2014 disappearance of MH370 with a question:

Why should search-and-rescue efforts be considered even when information is incomplete and substantial human, material and financial resources may be required? Students first discuss the question among themselves. This introduces the public-interest and legal-rationale dimensions of the unit and links the question to the purpose of accident investigation, without prejudging any particular historical response.

In the legal-inquiry stage, the case is used to organise instruction on the relevant sources: Annex 12 to the Convention on International Civil Aviation on search and rescue [23]; the national administrative regulation on the search and rescue of civil aircraft; the Chinese rules on civil aircraft occurrence investigation (CCAR Part 395); the air traffic management rules cited in the course materials (CCAR-93-R5); and the CAAC handbook on search and rescue work. Annex 13 on accident investigation provides the international reference for the distinction between investigation and the apportioning of liability [24]. Small groups locate and explain the relevant provisions and the differences in role between search-and-rescue coordination and accident investigation. The educational focus is on duties and institutional processes rather than on memorising lists of documents.

The ethical-deliberation stage uses text, audio and video resources to show how China activated its emergency plan at once and how further rescue forces joined the MH370 search, as an illustration of the responsibility expected of a major civil aviation state. Learners then compare stakeholder perspectives (search-and-rescue coordinators, investigators, operators and affected families) and discuss how uncertainty, resource allocation and fairness affect professional judgement. The Yichun accident follows. After examining how air traffic controllers and the flight crew handled the situation, students place themselves in these roles and discuss the decisions they would have made and why. The same rules and distinctions are thereby applied to a second case, which gives students an opportunity to apply the framework and explain the legal and operational limits on their decisions.

In the closing stage, the instructor summarises the legal and values-related points and stresses that the purpose of accident investigation is to establish causes, make safety recommendations and prevent recurrence, not to apportion fault or liability, in line with the international standard [24]. The point connects to just-culture thinking about balancing learning and accountability [11]. Students then prepare a concise evidence-based statement, identify the rule that supports their conclusion, reflect on the professional responsibility involved, and complete an after-class assignment in which they find and analyse a further case. Table 3 summarises the student tasks and the proposed evidence for each stage.

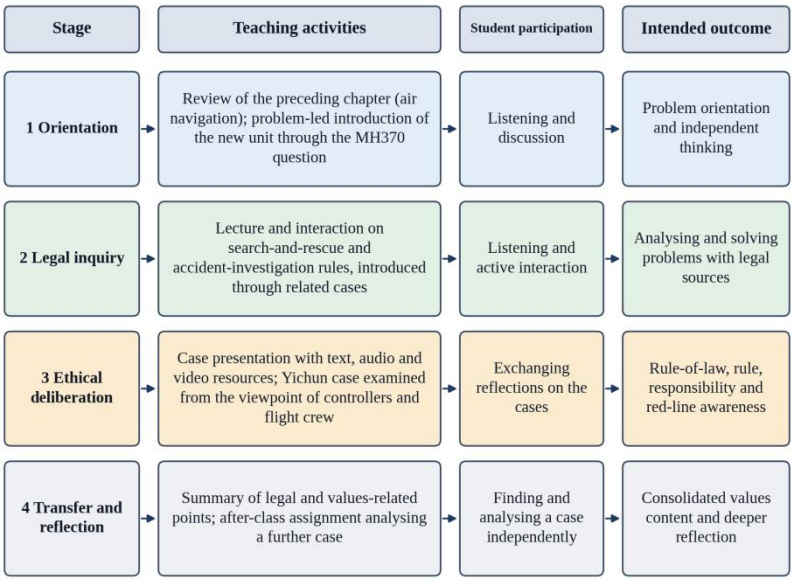


Figure 3 Four-Stage Lesson Design for the Search-and-Rescue and Accident-Investigation Unit, Showing Teaching Activities, Student Participation and Intended Outcomes

Table 3 Student Learning Tasks and Proposed Formative Evidence for the Illustrative Unit

Stage	Student learning task	Expected evidence / proposed feedback criterion
1. Orientation	Formulate an initial position on whether a search should continue when information is incomplete, and why	States a clear question; distinguishes facts, assumptions and value claims
2. Legal inquiry	Locate and explain provisions on search and rescue and accident investigation, and the roles of the bodies involved	Identifies authoritative provisions; applies them to actors and circumstances
3. Ethical deliberation	Compare stakeholder perspectives on MH370; judge the Yichun accident from the position of a controller or a flight crew member	Uses evidence; recognises uncertainty and trade-offs; reasons respectfully; distinguishes investigation from blame
4. Transfer and reflection	Write a concise evidence-based statement; analyse a self-selected case after class	Names the supporting rule; gives a supported reflection; applies the reasoning to a new case

3.4 Course-Wide Implementation Arrangements

Four implementation strands support the course-wide integration of values-related teaching (Figure 4). First, teachers are treated as the key actors. They are expected to pursue lifelong learning, strengthen their own ideological-education literacy and hold regular teaching-research activities built around the course objectives, so that legal syllabi and professional-responsibility goals are aligned by design instead of being left for students to infer. Second, teaching is student-centred: case-based heuristic teaching, experiential activities, discussion and flipped-classroom formats, together with online assignments, are used to raise participation and give students a sense of ownership. Third, online and offline resources are combined. Slides, micro-lectures and assignments are uploaded to the Xuexitong learning platform, tools such as Tencent Meeting support out-of-class teaching, and massive open online course (MOOC) resources complement face-to-face teaching, extending teaching time and space and offsetting limited class hours. Fourth, assessment is integrated with teaching: the share of formative performance in the overall grade is increased, taking account of classroom interaction, participation in thematic activities and everyday learning behaviour, and values-related items are placed in the final written examination.

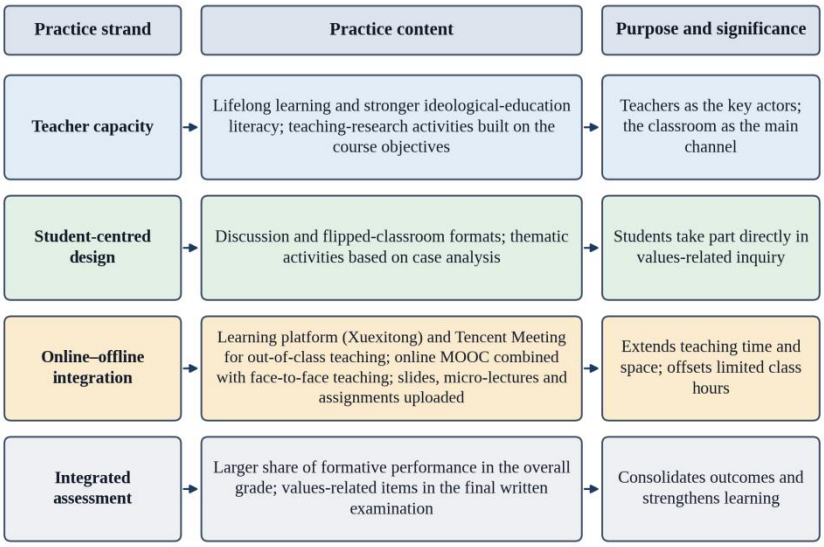


Figure 4 Implementation Pathway Linking Teacher Capacity, Student-Centred Design, Online–Offline Integration and Integrated Assessment to Their Practice Content and Purpose

3.5 Proposed Assessment Criteria

For assessment, a short criteria-based rubric is recommended in preference to an untested numerical composite score (Table 4). A written case response could be judged on regulatory literacy, analytical reasoning, safety responsibility, ethical reflection and transfer to a second scenario. Because values-related items are also placed in the final examination, the same criteria can be applied to examination answers, so that formative and summative evidence are judged against the same criteria. Marking should reward the quality of justification rather than agreement with a predetermined conclusion. The criteria are instructional recommendations; they have not been piloted or psychometrically validated.

Table 4 Suggested Criteria for Assessing Regulation-Informed Professional Judgement

Dimension	Observable student work	Illustrative criterion for proficient performance	Weakness to probe
Regulatory literacy	References relevant instruments and distinguishes their roles	Correctly identifies authoritative material and legal scope	Lists provisions without stating which actor or situation they govern
Analytical reasoning	Connects a rule to a specific actor, decision or action	Offers a coherent explanation with legally relevant reasons	Restates the rule text without linking it to the facts
Safety responsibility	Explains foreseeable safety implications and duties	Considers the protection of life and the limits of authority	Treats compliance as a formality and ignores consequences
Ethical reflection	Acknowledges uncertainty, affected parties and alternative interpretations	Avoids unsupported blame; justifies a balanced position	Endorses an expected conclusion without evidence
Transfer	Uses the reasoning framework in a second scenario	Demonstrates applicability beyond the initial teaching case	Reproduces the lesson example unchanged

4 DISCUSSION

4.1 Principal Findings

The design answers the three questions posed in the Introduction. In response to RQ1, it expresses the course objectives as three outcome domains, each tied to a form of instruction and a form of evidence (Table 1, Figure 1), and it distributes

values-related themes across all six modules rather than concentrating them in one lecture (Figure 2). In response to RQ2, the search-and-rescue unit treats MH370 and the Yichun accident as structured legal-inquiry tasks: students must identify rules, distinguish the functions of search, rescue and investigation, take stakeholder and role perspectives, and justify a position (Figure 3, Table 3). In response to RQ3, the rubric in Table 4 specifies observable evidence for regulatory literacy, analytical reasoning, safety responsibility, ethical reflection and transfer.

4.2 Relation to Existing Literature

The design is compatible with the alignment principle [13], in that each intended outcome is paired with a task and a form of evidence, and with the argument that professional training should cultivate characteristic ways of thinking and acting [7]. It echoes the view from legal education that analytical, practical and ethical learning should be taught together [8]. The lesson's emphasis on the difference between investigation and blame reflects the international standard for accident investigation and the just-culture literature [11, 24], while its attention to organisational context is consistent with ICAO safety management guidance and with accounts of latent organisational conditions [9-10].

Relative to earlier Chinese practice-oriented papers on aviation-law-related courses [1-2, 20], the contribution is the explicit chain from objective to activity to evidence, and the description of actual legal-reasoning tasks instead of reliance on policy slogans. This makes the Chinese policy of curriculum-integrated values education more intelligible to international readers. Empirical case studies in other disciplines of Chinese higher education, such as English linguistics [6], report classroom evaluations of comparable integration; the present design indicates what the corresponding evidence could look like in aviation law.

4.3 Implications for Practice

Five design principles follow from the case for instructors in aviation law and similar courses. (i) State outcomes as observable reasoning, not as attitudes to be endorsed. (ii) Choose cases that contain a genuine legal question and genuine uncertainty, so that students must argue from rules rather than from sentiment. (iii) Separate the purposes of different institutional processes, such as search, investigation and liability, because treating them as one invites unsupported blame. (iv) Apply the same criteria to formative tasks and to final examination items. (v) Verify case facts and legal texts against current authoritative sources before each use, since regulations and accident records are revised.

4.4 Transferability and Contextual Boundaries

The underlying design is not limited to aviation law. Railway safety, maritime regulation, healthcare management and engineering ethics also require students to connect rules with professional responsibility. Substantive transfer, however, requires adapting the cases, the regulatory authority and the assessment evidence to the destination profession. A legal justification that is appropriate for an accident investigator may not be appropriate for a controller who must coordinate immediate operational safety. Teaching should preserve those role differences and avoid suggesting that a universal moral formula can replace context-sensitive legal interpretation.

The course-wide implementation arrangements reflect the institutional setting in which the design was developed, including teacher preparation, student participation, blended teaching and assessment. These arrangements should not be assumed to operate identically across national or institutional contexts. The transferable component of the article is the alignment among professional knowledge, ethical reasoning, teaching tasks and reflection. This distinction allows international readers to evaluate the educational mechanism without assuming that all contextual features can be reproduced unchanged.

4.5 Limitations and Priorities for Empirical Validation

The main limitation is evidentiary. The source materials present curriculum objectives, cases and teaching arrangements but no comparison group, baseline measurement, student interview corpus, assessment dataset or longitudinal follow-up. Claims such as increased motivation, improved values or superior legal judgement would therefore be unsupported. The figures and tables show what the curriculum design contains, not what it has empirically achieved. Further limitations are the single course and institution, the interpretive character of the theme grouping and the rubric. The historical cases are condensed teaching prompts, and operational specifics and regulatory citations require validation against the latest authoritative records before classroom use. Values-related reasoning is also vulnerable to socially desirable answers, which is why the rubric rewards the quality of justification and not agreement with an expected conclusion.

A next-stage study could pre-specify its outcomes, refine the rubric with at least two independent raters, collect anonymised samples of case responses before and after the teaching unit and report inter-rater agreement using a statistic such as weighted kappa or the intraclass correlation coefficient. Where feasible, comparisons among cohorts or teaching arrangements could be designed with explicit attention to selection bias and instructor effects. Follow-up interviews could examine whether students can articulate how their legal reasoning changed, and delayed scenario assessments could test transfer beyond the taught case. Any collection of student data would require institutional ethics review and informed consent. Such a study would test the proposed educational mechanism rather than presume its effectiveness.

5 CONCLUSIONS

This article has developed an Aviation Law teaching design that integrates regulatory knowledge, analytical competence and professional safety responsibility within the Chinese context of curriculum-integrated values education. By restating course objectives as three outcome domains, mapping eight chapters, grouped into six modules, to 12 cases and 14 values-related themes, reconstructing a four-stage search-and-rescue lesson, describing four implementation strands and proposing a five-dimensional assessment rubric, it provides a practical and potentially transferable framework for professional education. The principal result is a transparent curriculum design; student learning outcomes were not evaluated. Future research should examine whether students' regulation-based explanations, risk-aware decisions and reflective judgements improve under the proposed approach, using independently assessed evidence.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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