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Creating Programs to Improve the Qualifications of Authors and Editors of Educational Literature: A Synergy of Cambridge Approaches and Kazakhstani Realities

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Abstract

The study is comprehensive in academic scope and is devoted to the design of professional development programs for authors and editors of educational literature through the integration of advanced Cambridge practices and the sector-specific requirements of the education system of the Republic of Kazakhstan. The conceptual focus is tied to reducing the gap between conventional approaches to instructional content development and the current pressures of digital transformation, which sharpen expectations for evidence-based decision-making, process controllability, and expert-validated robustness.

The stated aim is to provide a theoretical rationale and a practice-oriented design of a modular training model that brings together psychological mechanisms shaping team formation and functioning, flexible project management methodologies grounded in Agile and PMBOK, and the core propositions of the network theory of connectivism. Specifically, by aligning the Cambridge Framework for Life Competencies (2022) with Self-Determination Theory (SDT), the program fosters 'Reflective Practice' as a psychological feedback loop. In this model, iterative Agile reviews serve as the external mechanism for this internal reflection, directly supporting the 'Competence' component of SDT. The methodological component relies on a comparative analysis of international quality standards for educational materials and Kazakhstan's regulatory framework, including the current requirements applied within the national system of textbook development and evaluation. On the basis of the results obtained, an innovative approach is formulated for constructing personal learning networks (PLNs) for authors, enabling a substantial increase in expert-validated robustness and the scholarly level of educational materials while concurrently optimizing time-related costs.

A conclusion is advanced that productive synergy between global and local approaches constitutes a necessary condition for the modernization of educational publishing and the sustainable renewal of practices for developing educational literature. The proposed provisions carry applied significance for the managerial and project-oriented segments of education and publishing, as well as for specialists responsible for the creation and editorial-methodological support of instructional materials.

Keywords: *Connectivism, Personal Learning Networks, Agile Methodologies, Cambridge Approach, Educational Literature, Professional Development, Group Dynamics, Textbook Expertise, PMBOK, Digital Transformation.*

CONTENT

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INTRODUCTION

The relevance of the research topic is driven by the need for a systemic modernization of educational publishing practices in the Republic of Kazakhstan in the context of global digital transformation and the strengthening of the knowledge economy. As of the beginning of the 2024–2025 academic year, the country has 113 higher education institutions enrolling 624.5 thousand students [1]. Supplying a cohort of this scale with contemporary learning materials presupposes not only the updating of content, but also a redefinition of the professional profile of those who design and curate educational content. Statistical data for the fourth quarter of 2024 register a 5.4% contraction in the volume of services in the publishing sector, while book publishing shows the steepest decline—17.5% year-on-year [2]. Such dynamics point to the exhaustion of traditional production-and-editorial models and intensify demand for specialists capable of operating within new managerial and technological regimes.

The scholarly problem field in this domain is associated with a shortage of a unified methodological foundation that would make it possible to coherently combine internationally recognized quality standards for educational publications—most notably, the benchmarks associated with the Cambridge approach—with adaptive project management methods and networked learning formats, all aligned with the norms and requirements of Kazakhstan's legal and regulatory environment [24–25, 28–31]. **The purpose of the study** is to construct a conceptual framework for a professional development program that enables the coupling of global educational trends with local publishing practices [35–36]. **The scientific novelty** lies in developing a model of professional growth for authors of educational literature through the integration of connectivist network didactics and iterative Agile management cycles, adapted to national procedures and standards of expert review in the Republic of Kazakhstan [10, 19–22, 24–25]. The research **hypothesis** holds that the implementation of professional development programs grounded in the synergy of Cambridge experience and a project-based approach can improve the quality and expert robustness of educational content while simultaneously reducing development timelines [28–31, 19–22].

The conceptual architecture of such a program should rest on the principle of end-to-end quality manageability, ensuring traceability of decisions across all stages of the textbook life cycle: from the articulation of learning outcomes and content design to piloting, expert evaluation, and subsequent updating [24–25, 28–30]. In this context, methodological significance attaches to the differentiation of roles and areas of responsibility (author, scientific editor, methodologist, subject-matter expert, learning experience designer), as well as to the formalization of quality criteria expressed through measurable indicators: cognitive complexity and the logic of content progression, alignment with curricula, evidentiary rigor and the correctness of the source base, inclusivity and linguistic normativity, digital compatibility, and the potential for multimodal presentation [25, 28–30]. Such operationalization shifts the evaluation of educational literature from a predominantly expert-intuitive plane into a mode of reproducible audit, thereby increasing the stability of review outcomes and reducing the risk of subjective divergence across expert judgments [23, 26].

An additional theoretical-and-applied dimension concerns the fact that digital transformation changes not only channels of distribution, but also the ontology of the textbook as a product: it increasingly functions as an updatable learning environment that supports versioning, modularity, and the use of data on learning activity for subsequent improvements [30, 34]. Within Agile cycles, this makes it possible to build short iterations with obligatory feedback from academic communities and target user groups, cultivating a culture of continuous improvement and lowering the costs of late-stage corrections [19–22]. The network principles of connectivism, in turn, provide a basis for professional communities of authors and experts in which knowledge is constructed and validated through interaction, while the diffusion of best practices acquires the character of a scalable mechanism [10,

12, 32]. Taken together, these foundations form prerequisites for the institutionalization of a new workforce development model oriented toward reproducible quality, technological flexibility, and compliance with national regulatory requirements [24–25].

CHAPTER 1. PSYCHOLOGY AND TEAM-BUILDING IN THE EDUCATIONAL PUBLISHING SECTOR

Building Effective Teams and Selection Criteria for Specialists

The development of educational literature constitutes a multi-layered activity that requires the coordination of interdisciplinary teams, typically comprising authors, literary and technical editors, designers, and coordinators responsible for project procedures. Under contemporary conditions, an educational project is increasingly conceptualized as a dynamically evolving system in which the project manager's role shifts from predominantly administrative oversight toward the facilitation of communication, the alignment of meaning, and the management of collective decision-making. An analysis of practices in leading international institutions, including Columbia University, indicates that project effectiveness is determined by psychological factors and the quality of intragroup interaction at roughly the 80% level [3]. Within this logic, the selection of authors is shaped not only by academic competence, but also by readiness for networked forms of collaboration involving distributed creation and joint verification of content.

The formation of a "Dream Team" presupposes attention to participants' cognitive diversity, since variability in thinking styles and problem-solving strategies increases the group's adaptability to complex methodological and editorial-technological challenges. Research in organizational psychology shows that teams characterized by a high level of psychological safety consistently demonstrate stronger outcomes with respect to creativity and the quality of the final product [4]. Psychological safety is understood as a shared confidence that errors are permissible, questions may be raised freely, and unconventional ideas can be expressed without the risk of sanctions or stigmatization [6]. Table 1 outlines the core factors that determine the productivity of author teams.

As a methodological continuation of these propositions, cognitive diversity is best treated not as an accidental difference in individual styles, but as a managed resource for designing quality. Such a resource becomes visible through the deliberate allocation of functional roles (concept generation; structuring and evidentiary rigor of content; linguistic and stylistic normalization; visual-didactic composition; technological layout; and digital compatibility), and through agreed-upon protocols of team-based work: unified decision criteria, communication regulations, task routing, and a transparent system of text versioning. With this organization of interaction, the probability of "groupthink" decreases, editorial decisions become more substantively argued, and the reproducibility of quality is supported across successive development iterations.

At the same time, the stability of team outcomes depends on the presence of institutional mechanisms that support psychological safety, moving it from a declared norm into an enacted practice. Such mechanisms include facilitated retrospectives after key milestones, procedures for nonjudgmental error analysis, the advance negotiation of "rules of discussion," and the cultivation of a feedback culture oriented toward the product and explicit criteria rather than personal evaluation. In educational publishing projects, these practices acquire particular importance because conflicts of interest are effectively unavoidable: between didactic clarity and academic completeness, between authorial voice and the requirements of unification, and between production speed and the depth of expert review. Embedding these practices into the development cycle helps sustain high levels of motivation and team alignment, improving the quality of the final learning material without increasing transactional costs.

Table 1. Psychological factors of success for a content development team (compiled by the author based on [4, 5, 7, 8]).

Factor	Description and mechanism of influence	Indicator of success
Psychological safety	Reduction of fear of criticism during the review stage	Depth of peer review
Cognitive diversity	Combination of academic and practice-oriented approaches	Methodological novelty
Group cohesion	Unity of the manuscript's terminological apparatus	Absence of logical gaps
Participant autonomy	Ability to make independent decisions within a module	Speed of chapter preparation

Interaction between author and editor within this system loses its linear character and takes the form of a cyclical, mutually conditioned process in which the alignment of meaning, the refinement of didactic objectives, and editorial optimization proceed in parallel with the strengthening of the evidence base and the improvement of the text's structure. Under these conditions, the editorial function extends beyond proofreading and normalization to include the moderation of iterations, the management of terminological harmonization, the assurance of logical coherence, and the maintenance of unified quality criteria throughout the life cycle of the educational product. This interactional regime increases the reproducibility of standards, reduces the likelihood of conceptual divergence at later stages, and creates preconditions for lowering the costs associated with repeated expert review.

The concept of connectivism establishes a fundamentally different organization of authorial labor: the development of educational literature ceases to be an individualized practice and becomes a networked construction of knowledge grounded in stable professional communities. Within such communities, current scientific and methodological benchmarks, instructional design tools, practices of expert validation, and standards of content presentation are accumulated, supporting continuous competence renewal and reducing the risk of methodological inertia [9]. The author's integration into a network of professional interaction thus functions not as an optional enhancement, but as a structural mechanism for maintaining the relevance and quality of the educational text, strengthening its resilience to rapid shifts in educational requirements and in the underlying content domains.

Tuckman's Group Dynamics in the Context of Textbook Development

The evolution of a creative team follows regularities of group dynamics most systematically described in Bruce Tuckman's model. For educational projects, the five-phase logic is particularly relevant: forming, storming, norming, performing, and adjourning [13]. Applying this framework enables a more precise interpretation of shifts in team behavior and supports more deliberate steering of those shifts by aligning managerial interventions with the tasks characteristic of each stage. During forming, what becomes pivotal is establishing a clear project architecture: fixing roles, boundaries of responsibility, quality criteria, and communication channels; during performing, by contrast, the role of distributed leadership and the maintenance of autonomy grows, since the team already demonstrates the capacity for self-organization and consistently high productivity [15, 16]. Management effectiveness, therefore, is determined not by a universal leadership style, but by the contextual variability of decisions that are synchronized with the staged development of the group.

The greatest managerial load is generated by the storming stage, in which disagreements naturally intensify around methodological choices, the interpretation of learning outcomes, and the perceived fairness of workload distribution. In publishing projects, this phase often surfaces as a conflict of professional lenses: an academic orientation toward completeness and evidentiary rigor may come into tension with an editorial-practical orientation toward clarity, didactic appropriateness, and compliance with formatting standards. Constructive navigation of storming does not require suppressing conflict; rather, it requires translating disagreement into a mode of managed discussion grounded in pre-established quality criteria and decision-making procedures. Within this logic, emotional intelligence and active listening function not as optional "soft skills," but as instruments for managing complexity: they reduce escalation, sustain working relationships, and help keep discussion within the boundaries of the subject matter, thereby enabling the achievement of negotiated decisions [8].

To illustrate the stages of team development in publishing projects, Table 2 is provided.

Table 2. Stages of team development according to B. Tuckman in publishing projects (compiled by the author based on [13]).

Stage	Participant behavior	Leader tasks	Project risks
Forming	Politeness; testing boundaries of responsibility	Defining goals and roles	Task ambiguity
Storming	Conflict; struggle for influence	Facilitating discussions	Timeline slippage
Norming	Alignment on standards and rules	Supporting collaboration	Groupthink
Performing	High productivity; synergy	Delegating authority	Participant burnout
Adjourning	Completion of work; reflection	Recognizing achievements	Knowledge loss

In the development of large educational products, including Kazakhstan's national textbooks, author–editor teams often operate in distributed formats. This circumstance heightens the dependence of outcomes on participants' digital culture and their command of collaborative tooling, since remote interaction reduces the share of spontaneous alignment and increases the importance of formalized communication procedures. During norming, distributed work is especially sensitive: it is precisely in this period that working rules, formatting standards, and unified approaches to content are become established, and insufficient process transparency leads to text fragmentation, task duplication, and instability in editorial decisions. For this reason, the use of task management systems and version control becomes not a technical add-on but an organizational mechanism that sustains pace, alignment, and the reproducibility of quality [11, 14].

Psychological Determinants of Success and Authors' Motivation

The motivation of an author team functions as one of the determining factors that directly correlates with the quality of the educational content produced and with the stability of project outcomes. Within the logic of self-determination theory, optimal productivity is achieved when three basic psychological needs are satisfied: autonomy, competence, and relatedness [5]. Autonomy in this context is expressed as recognition of the author's professional agency and the legitimacy of expert decisions; competence as the match between project tasks and the level of qualification, together with opportunities to demonstrate mastery through challenging yet attainable demands; and relatedness as inclusion in a collective where trust, mutual respect, and

shared responsibility for the final product are maintained. When these conditions are combined, the likelihood of innovative solutions increases, since an internal form of motivation is formed—one that tends to surpass external incentives and administrative pressure in its effectiveness. Figure 1 will present the distribution of motivational factors in the academic environment.

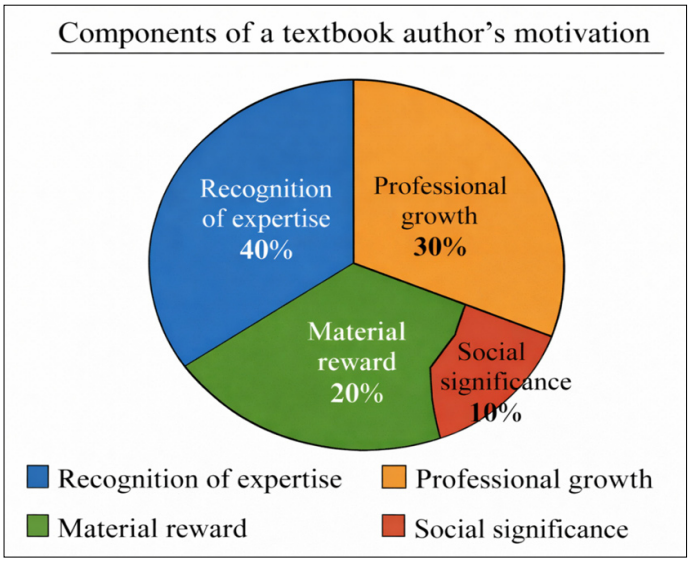

Figure 1. Distribution of motivational factors in the academic environment (compiled by the author based on [3]).

A substantive organizational condition for sustaining such a motivational climate is a fault-tolerant culture, understood as a mechanism of managed learning during the development of new methods and instructional models. In innovative educational projects, errors are an inevitable consequence of experimentation, piloting, and the refinement of didactic decisions; accordingly, attempts to institutionally "zero out" error-proneness lead not to higher quality, but to the displacement of problems into a latent zone. When fear of sanctions dominates, practices of defect concealment, delayed feedback, and simulated agreement emerge, obstructing timely correction of the project trajectory [7]. By contrast, treating errors as data for improvement—while preserving personal safety and maintaining responsibility for results—accelerates iterative refinement and reduces the cost of late-stage fixes.

The motivational climate exerts a direct influence on the expert robustness of the educational product, that is, its capacity to pass external peer review and expert evaluation successfully due to high density of internal elaboration, logical consistency, and the alignment of all structural levels (goals, content, methodological apparatus, language, and design). Internal motivation and a fault-tolerant culture strengthen the quality of internal control because participants more frequently initiate critical checks, allow discussion of vulnerable points, and launch revision cycles in a timely manner. As a result, not only does the likelihood of passing formal procedures increase, but the substantive adequacy of the textbook as an instructional instrument improves as well: the share of methodological gaps, terminological inconsistencies, and latent conceptual errors—typically revealed by external reviewers—declines [17].

From a managerial standpoint, sustaining autonomy, competence, and relatedness requires the purposeful tuning of processes: transparent quality criteria, predictable distributions of responsibility, regular feedback and recognition of contributions, and the design of tasks as trajectories of professional growth. An additional role is played by the balance between the freedom of authorial decision-making and the normative framework of editorial policy: excessive regulation reduces autonomy, whereas the absence of standards increases the transaction costs of coordination and undermines textual integrity. Accordingly, an optimal model of motivational governance in educational publishing projects is grounded in a combination of clear standards and supported professional agency, creating preconditions for sustainable quality and for reducing risks at the stages of external expert review.

CHAPTER 2. MANAGEMENT METHODOLOGY: AGILE AND PMBOK IN EDUCATION

The Textbook Life Cycle: From the Waterfall Model to Flexible Iterations

Historically, the development of educational literature relied on a waterfall logic in which the phases of planning, manuscript preparation, editorial and proofreading work, and layout followed one another with little meaningful overlap. This sequencing supported calendar predictability; however, under conditions of high variability in requirements for the content and format of learning materials—especially those associated with ongoing updates to educational standards in the Republic of Kazakhstan—it demonstrates limited effectiveness. Rigid phase-gating increases project inertia: changes that arise after early stages have been closed force costly rollbacks, amplify the risk of inconsistencies, and require reworking blocks that were previously treated as "finished." In response to these constraints, contemporary practice increasingly employs a combined managerial architecture that integrates PMBOK® standards—so as to preserve structural integrity, schedule control, and risk management—with Agile methods that increase adaptability and accelerate the incorporation of corrections [11].

Agile logic makes it possible to decompose textbook creation into short iterations (sprints), each of which ends with the release of a verifiable outcome: a functionally complete content fragment (for example, a paragraph, a thematic block, or a chapter). This mode shifts quality from "end-stage inspection" to a continuous procedure in which feedback from methodologists and teachers is built into the process at early stages rather than being captured only post factum. For Kazakhstan's conditions, this is of particular importance because the parameters and emphases of expert evaluation may be refined during development; early validation reduces the probability of mismatches and decreases the

volume of late-stage corrections, thereby improving project manageability and the predictability of passing external review [18].

Methodologically productive appears to be a "hybrid management" model in which PMBOK® artifacts and procedures provide the governance frame for scope, timelines, communications, and risks, while Agile ensures an iterative development rhythm and regular delivery of results. In this configuration, "structural discipline" is expressed through the formalization of core project documents (requirements matrix, risk register, communications plan, acceptance criteria), whereas "executional flexibility" is expressed through the management of a textbook-content backlog, the prioritization of tasks by educational significance, and sprint planning aligned with objective constraints of the editorial-and-publishing cycle. In this way, a balance is achieved between normative determinacy of the process and the capacity to respond operationally to change—an especially consequential point when distributed teams work in parallel and multiple approval loops are present.

The practical implementation of an iterative approach requires the institutionalization of internal review mechanisms at the level of each sprint: standardized quality checklists, protocols of methodological validation, and procedures for harmonizing terminology and the didactic apparatus. In this setting, the unit of management becomes not an abstract "text," but a measurable deliverable that displays readiness characteristics: logical completeness, alignment with learning outcomes, correctness of language and examples, consistency with previously approved sections, and technical suitability for subsequent layout. Such operationalization increases transparency of progress, reduces the transactional costs of communication, and strengthens the expert robustness of the educational product by accumulating quality as the manuscript develops rather than attempting to "build it in" at the final stage (see Table 3).

Table 3. Comparison of Waterfall and Agile approaches in publishing management (compiled by the author based on [19]).

Comparison parameter	Waterfall (sequential)	Agile (flexible)	Recommendation for Kazakhstan
Planning	Long-term, fixed	Short-term, adaptive	Agile for content
Documentation	Extensive, mandatory	Minimal as needed	Hybrid approach
Interaction	Infrequent, formal	Continuous, live	Daily stand-ups
Testing/verification	At the end of the full cycle	After each iteration	Chapter-level review
Risk management	Reactive	Proactive	Agile monitoring

According to Standish Group data, initiatives implemented on an Agile basis show approximately a threefold advantage in the probability of successful completion compared with projects organized under a waterfall logic [19]. In the Kazakhstani context, this relationship can be interpreted as a managerial argument in favor of iterative development of the textbook manuscript: early validation of decisions, regular delivery of verifiable fragments, and operational refinement of requirements reduce the risk that materials will be returned for substantial revision after national expert review, while also decreasing the losses of time and resources associated with the late discovery of nonconformities.

Agile Tooling: Kanban Boards, Sprints, and Retrospectives

The practical implementation of Agile in publishing projects presupposes the use of instruments adapted to the specificity of the editorial-and-publishing cycle. Kanban boards provide visualization of the workflow—from task formulation and drafting to substantive editing, proofreading, and pre-layout preparation—thereby forming a unified operational field for all participants. Through transparent status signaling and limits on work in progress, the "information silo" effect is reduced: situations in which an author or editor lacks an up-to-date view of manuscript movement and is forced to compensate for the informational deficit through repeated clarifying communications [11]. As a result, timelines become more predictable, the probability of parallel uncoordinated edits declines, and quality becomes more governable, because control points are embedded as procedural elements rather than added as late-stage interventions.

The use of sprints of approximately two weeks in publishing practice performs a function of production "rhythmization" and shifts team work into a mode of regular delivery of verifiable outcomes. A two-week cycle is typically sufficient to complete a logically coherent fragment (for instance, a paragraph or a thematic block) and to pass it through primary editorial and methodological screening, while still remaining sensitive to changing requirements and feedback. Such cadence disciplines planning, increases concentration on attainable goals, and sustains stable project dynamics—an especially salient issue for distributed teams and for projects that involve multiple approval loops. At the same time, sprint-based organization requires a precise definition of what constitutes "done" for a fragment: acceptance criteria, rules for version fixation, and procedures for terminological harmonization; otherwise, speed is achieved at the cost of defect accumulation.

A key mechanism of organizational learning in the Agile model is the retrospective: a regular meeting at the end of an iteration in which effective practices are recorded, the causes of impediments are identified, and concrete improvements are formulated for the next cycle. Figure 2 will demonstrate an Agile sprint schedule for a single textbook module.

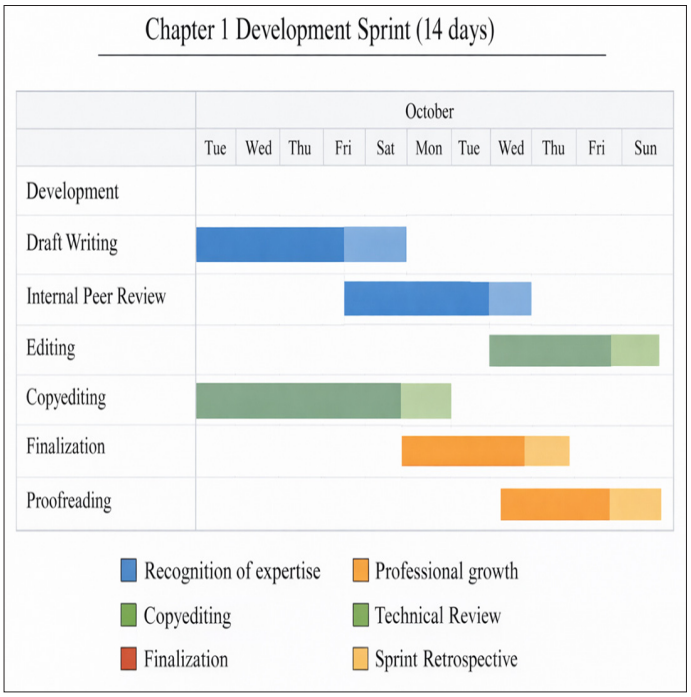

Figure 2. Agile sprint schedule for a single textbook module (compiled by the author based on [11]).

In publishing projects, the value of retrospectives increases because many losses arise at role interfaces (author–editor–proofreader–designer) and within hidden approval queues; systematic analysis of these "bottlenecks" makes it possible to reduce transaction costs and increase process throughput without sacrificing quality. The experience of Haremi Publishing indicates that the introduction of retrospectives can shorten time-to-release and reduce costs by optimizing internal procedures and eliminating recurring inefficient actions [11].

The Economics of Adaptability: Transitioning to these Agile cycles necessitates a specific shift in resource allocation

While traditional Waterfall models minimize interaction to ostensibly reduce immediate costs, this model requires a typical initial time investment of 15–20% in additional communication cycles. This investment serves as a proactive risk-mitigation strategy; by front-loading clarity and alignment during sprints, the model reduces the probability of late-stage 'expert-validated robustness' rejections—which typically costs 40% more in rework—thereby ensuring a higher net ROI for the publishing house.

Taken together, Kanban visualization, short iterations, and a retrospective improvement loop form the practical Agile infrastructure in publishing, ensuring transparency, pace, and the stable accumulation of quality.

Convergence of IT Practices and Educational Content Management

Contemporary publishing production increasingly borrows managerial and technological solutions from engineering practices in software development. One of the most productive instruments is code review, which in educational publishing is transformed into a systematized format of manuscript peer review. Unlike traditional proofreading, such a procedure is oriented not toward detecting formal errors, but toward expert verification of methodological logic, the correctness of didactic transitions, the coherence of the conceptual apparatus, and the alignment of content with stated learning outcomes [23]. Internal collegial review conducted by co-author developers strengthens the evidentiary basis of decisions and reduces the risk of latent conceptual defects that typically surface only at the stage of external review. With the institutionalization of peer review, a key condition becomes the presence of unified assessment criteria and a feedback protocol that ensures the reproducibility of expert judgments and the comparability of outcomes across different reviewers [23, 26].

An additional element of technological modernization is the adoption of version control systems for text files—functional analogues of Git adapted to manuscript work and to editorial-and-publishing processes. Version control provides full traceability of change: the authors of edits, their content, the chronology, and the rationales for corrections are recorded, enabling governance of parallel work by multiple participants, minimizing collisions, and, when necessary, returning to prior revisions. For educational publishing projects, this has not only organizational but also evidentiary and expert significance, because it increases the transparency of approvals and facilitates reconstruction of the decision logic. In Kazakhstan's context, where textbooks undergo multi-stage evaluation within the I. Altynsarin National Academy of Education, a documented history of edits becomes an instrument for protecting the authorial position and for substantiating contested methodological decisions during expert review [18]. In combination, peer review and version control constitute an "engineering" infrastructure of quality in publishing: quality becomes not a one-time act of checking, but a continuous, managed process supported by regulations, criteria, and technological transparency.

CHAPTER 3. QUALITY CONTROL SYSTEM AND EXPERT EVALUATION: THE KAZAKHSTANI CONTEXT

Regulatory Requirements and National Standards of the Republic of Kazakhstan

In 2024, Kazakhstan's national system for evaluating educational literature was substantially reconfigured: by order of the Minister of Education dated October 7, 2024, the rules for textbook provision were updated, which effectively tightened requirements for composition, substantive completeness, and methodological coherence of publications [24]. As a result, the regulatory image of the "modern textbook" itself has shifted: it is treated not as a static carrier of information, but as a hybrid educational product combining a print component with digital services

that enable variability in learning pathways and expand didactic scenarios [24–25].

Table 4 below describes the criteria used by the National Academy of Education to assess textbook quality.

Table 4. Criteria for textbook quality assessment by the National Academy of Education (compiled by the author based on [24]).

Criteria group	Requirements	Consequences of noncompliance
Content-related	Scientific validity, factual accuracy, relevance	Rejection of the manuscript
Language- related	Age appropriateness, norms of speech	Returned for revision
Illustrative	Captions present, unified style, ethical compliance	Requirement to replace visuals
Technical	Correct QR codes, navigation in the e-textbook	Technical defect

Within the updated logic, structural elements acquire the character of mandatory markers of quality and verifiability: a textbook must include an introduction, a glossary, and a reference list, as well as QR codes that provide access to relevant digital resources and accompanying materials [25]. The introduction performs a function of goal-oriented and methodological navigation; the glossary serves as an instrument of terminological unification; the reference list functions as an indicator of scholarly integrity and of a correct source base; and the QR component reinforces the "textbook–digital environment" linkage, making it possible to supplement and update specific elements promptly without undermining the overall structure [25].

A priority criterion becomes "expert robustness," that is, the capacity of an educational product to pass external evaluation due to deep internal elaboration, the absence of methodological gaps, and evidence-based coherence of content. The regulated periodicity of expert evaluation is once every five years for general education textbooks and once every six years for special education textbooks [18]. In this regard, professional development programs should cultivate in authors the skills needed to work within the normatively defined framework of Kazakhstan's state educational standards while also ensuring scientific reliability, didactic appropriateness, and accessibility of presentation [24–25]. In the 2024/2025 academic year, textbooks targeted for reissue included those in natural science, history, and geography, which required accelerated updates of statistical data and the revision of cartographic materials, including the alignment of factual statements and visual sources with the current evaluation requirements [18].

Assessment Tooling and Internal Peer Review

To increase the likelihood of successful passage through external expert evaluation, publishing organizations are well advised to deploy internal quality assurance loops grounded in standardized checklists. Such an instrument should fix verifiable criteria at all product levels: the didactic justification of tasks and their alignment with learning objectives; the correctness of terminology and referencing; linguistic normativity; structural integrity; and the quality of either print execution or the user interface of an electronic textbook. An additional mechanism for increasing the reliability of internal assessment is the use of varied peer review models—from single-anonymous to double-anonymous and open formats—allowing the minimization of personal bias effects and increasing the reproducibility of expert conclusions [23].

Under conditions of rapid digitalization, expert practices are increasingly supplemented by algorithmic control procedures: automated systems are used to detect textual borrowing, identify repetition or improper reuse of visual materials, and verify compliance with formal standards of reporting and formatting. The growing role of such instruments implies that the assessment of a textbook manuscript is conducted not only by a professional community of experts, but also through machine-based verification, which increases the importance of formal impeccability: metadata, correct citations, stylistic unity, completeness of mandatory structural elements, and compliance with regulated templates [26]. In this way, high-quality manuscript preparation acquires the character of technologically supported compliance that is embedded into the production process (see Figure 3).

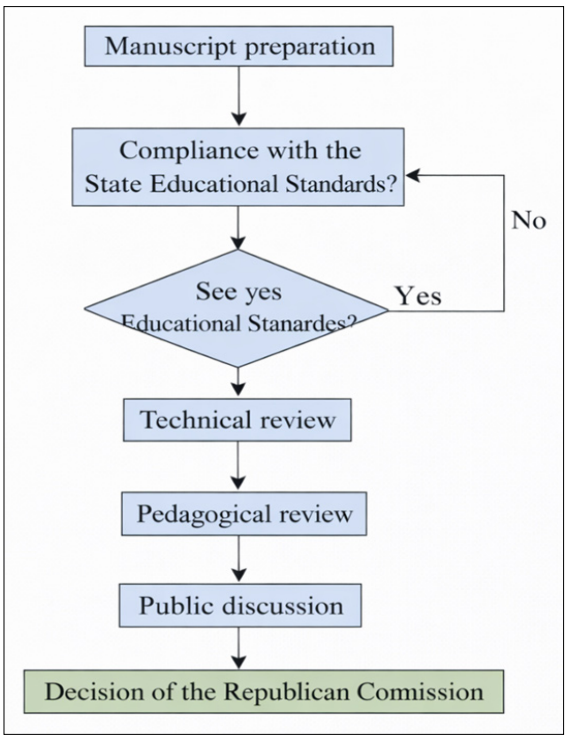

Figure 3. Algorithm for passing a multi-stage textbook evaluation in the Republic of Kazakhstan (compiled by the author based on [18]).

As a methodological extension of internal quality control, a productive step is to integrate checklists into a system of stage-based quality gates, in which transition to the next phase is permitted only after a defined set of readiness criteria has been confirmed. Within the publishing cycle, this architecture disciplines the sequence of work and reduces the cost of corrections by detecting defects early; at the same time, the checklist ceases to be a purely formal document and becomes an instrument of managed expert review, linked to the risk register and to decision protocols [19–20]. In the digital segment of e-textbooks, such an architecture additionally presupposes the testing of interface scenarios and accessibility, the verification of QR transitions and media inserts, and the checking of compatibility with standard platforms, which increases the product's resilience during deployment in mass educational settings [25].

In parallel, the importance of documenting "decision traces" increases in the form of change logs, issue cards, and reasoned responses to reviews, ensuring transparency and evidentiary support for revisions. Under conditions of automated checking, unified rules for managing sources and data become especially critical: the provenance of statistics, the currency of cartographic and illustrative materials, the legal cleanliness of image rights, and the consistency of content storage and description formats. Such regulation creates a basis for synchronizing human and machine expert review, reducing the probability of contested interpretations and increasing the expert robustness of the educational product under a multi-stage evaluation regime [26].

Features of Managing the Development of Digital Textbooks

The transition to digital formats, including electronic textbooks (e-textbooks), is being established in Kazakhstan as a priority trajectory for the development of educational literature. The development of e-textbooks objectively expands the project team: in addition to authors and editors, participation is required from multimedia specialists, programmers, and UX designers, since the digital product is formed at the intersection of didactics, engineering, and user experience. In this configuration, professional development programs should include substantive modules on pedagogical design in digital environments, because the direct transfer of printed text into an electronic format ensures neither methodological effectiveness nor full use of the capabilities of the digital platform [25]. Accordingly, a key competency becomes the ability to design educational material as an interactive learning scenario in which content, learner activity, and mechanisms of progress monitoring form a single structure.

Quality criteria for e-textbooks are connected not with the volume of digitized text, but with the functionality of the educational experience: task interactivity, the presence of feedback instruments, and adaptability across different devices [25]. Interactivity implies not decorative elements, but embedded practices of active knowledge application (simulations, training modules, tasks with checks and hints, interactive maps and models) that support a shift from information delivery to skill formation. Feedback tools presuppose both automated mechanisms of checking and explanation and didactically sound routes of repetition and increasing complexity that allow gaps to be diagnosed and the learning trajectory to be corrected. Adaptability, in turn, includes the technical correctness of display across devices and pedagogical variability: the possibility of varying pace, the level of support, the format of information presentation, and the sequence of working with content without undermining of course logic.

CHAPTER 4. CAPACITY DEVELOPMENT: SYNERGY OF CAMBRIDGE AND CONNECTIVISM

The Cambridge Model: Emphasis on Active Learning and Validity

The Cambridge Approach to Textbooks is conceptually grounded in the principle of curriculum coherence, which presupposes a systematic alignment of intended learning outcomes, pedagogical strategies, textbook content, and assessment procedures into a single logical construct [28]. Table 5 below presents a comparison of textbook-oriented principles across approaches.

Table 5. Key principles of the Cambridge approach to textbooks (compiled by the author based on [28–31]).

Principle	Description	Application in Kazakhstan
Curriculum Coherence	Alignment of goals, materials, and tests	Linking the textbook to criterion-referenced assessment
Evidence-based	Use of research findings	Reliance on domestic research evidence
Active Learning	Learner engagement in the process of inquiry	Project-based activity embedded in the textbook
Professional Development	Supporting teachers through methodology	Methodological guides for educators

Within this model, the textbook is treated not as an autonomous carrier of information, but as a didactic instrument that supports teacher practice: it structures the instructional process, determines the sequence of concept development, and regulates the depth of topic elaboration in line with curricular expectations [28]. In this way, the approach safeguards not only thematic integrity, but also methodological coherence of the course, reducing the likelihood of divergence between declared aims and actual classroom practice.

A substantive quality criterion within the Cambridge paradigm is validity, understood as a warranted confidence that learning materials indeed cultivate precisely the knowledge and skills stated in the curriculum [28]. The achievement of validity is supported through reliance on evidence-based, research-backed design decisions, including carefully sequenced explanations, representative examples, application tasks, and checking instruments functionally aligned with target outcomes [28]. In the Kazakhstani context, adaptation of this approach implies a methodological shift from predominantly reproductive transmission of facts toward the construction of problem-oriented tasks that activate analysis, interpretation, and argumentation, while also supporting the development of critical thinking as a measurable learning outcome [28–31].

Connectivism and Personal Learning Networks (PLNs) for Authors

Connectivism, associated with George Siemens, conceptualizes learning as the formation and reconfiguration of connections among informational nodes within a network. Under conditions of digital reality, knowledge takes on a distributed character: what becomes decisive is not so much the volume of information retained at a given moment, but the capacity to rapidly locate relevant sources, evaluate their reliability, and integrate newly obtained evidence into existing cognitive and professional structures [9]. In applied terms for textbook development, this means that the stability of content quality rests on systematically organized access to scientific and methodological resources, as well as on regular testing of one's own decisions within a professional environment. Within this logic, building a personal learning network (PLN) functions as an infrastructural competence, including interaction with experts, specialized databases, scholarly journals, and professional communities [12].

Integrating the PLN concept into professional development programs shifts authors' growth from the format of episodic courses to a regime of continuous, self-sustaining competence renewal. Such a trajectory supports faster uptake of new methodological reference points and heightened sensitivity to shifts within content domains through ongoing communication with global academic and pedagogical communities [10, 12, 32]. Empirical support for the applicability of this model in Kazakhstan is provided by the expansion of online communities of teachers and authors, including those developed with institutional support structures such as the British Council, indicating the practical viability of network mechanisms for professional growth and for exchanging evidence-based practices [33].

Scaling Strategies for Managing Large Projects

Managing the development of the entire textbook series for the general education system requires movement from isolated project decisions toward scaling strategies that ensure reproducible quality and resource efficiency. In this regard, an appeal to the principle of "systemness," articulated in Deloitte analytical materials, is methodologically productive: emphasis is placed on coordinating the product portfolio as a single educational ecosystem rather than as a set of disconnected publications [35]. Practical implementation of this logic presupposes the unification of methodological foundations and governance procedures: building shared content repositories, applying common design templates, and organizing centralized expert pools, which reduces transaction costs of coordination and minimizes divergence across subject lines and grade levels.

Scalability in such programs is achieved not through mechanical replication of solutions, but through a regulated architecture of processes and data. Cloud-based project management systems support a unified "progress picture," enable the governance of dependencies among textbooks across grades, fix versions, comments, and rationales for change, and provide schedule and quality control in distributed teams [27]. For Kazakhstan, which positions the development of educational services toward a regional educational hub, such infrastructure gains strategic significance because it creates conditions for serial content production while preserving methodological coherence and the governability of expert evaluation [27].

A critically important component of systemness is content engineering, which involves modular design of materials and their reuse across subjects and levels of complexity. Effective repositories require a formalized taxonomy, unified naming rules, and metadata (level, learning objective, task type, cognitive complexity, assessment linkage), enabling rapid assembly of variant textbook versions without breaking methodological logic. Under such an arrangement, content becomes a managed asset: updates to statistics, examples, or illustrations can be performed pointwise, with corrections propagating to related elements, thereby lowering the risk of inconsistencies and improving the expert robustness of the entire series.

An additional dimension of scaling concerns the governance of the expert loop and quality risks at the portfolio level. Centralized expert pools can be strengthened through unified acceptance criteria, calibration sessions, and digital decision logs that capture argumentation on disputed issues and ensure comparability of evaluations across different teams [23, 26]. In a cloud environment, this is complemented by access-rights settings, information security policies, and audit procedures for changes—an especially salient requirement under parallel development and multi-stage approvals. As a result, systemness functions not as a declarative slogan, but as a technologically supported way of maintaining a unified quality standard under increasing scale and organizational complexity of the project [35].

CHAPTER 5. PRACTICAL TOOLING

The RACI Responsibility Matrix and Terms-of-Reference Templates

To minimize role ambiguity and prevent functional overlap within an author–editor team, the use of a RACI matrix is methodologically advisable as an instrument for formalizing responsibility in a project. This approach makes it possible to fix the distribution of authority and communication loops: to identify those who execute specific tasks (Responsible), the person who makes the final decision and bears responsibility for the outcome (Accountable), participants whose expert input is required while a decision is being prepared (Consulted), and those who must be kept informed about progress and results (Informed). In publishing projects, such structuring is especially consequential because most quality defects and schedule slippages emerge at role interfaces, where clear coordination rules are absent and decision acceptance criteria remain undefined.

Table 6 describes the features of a RACI matrix for the process of developing a textbook chapter.

Table 6. RACI matrix for the process of developing a textbook chapter (compiled by the author based on [11]).

Role / Task	Author	Editor	Designer	Coordinator
Developing the module concept	R	C	I	A
Creating text and tasks	R	C	I	I
Literary editing	C	R	I	A
Creating illustrations and diagrams	I	C	R	A
Final approval	C	C	I	R/A

The application of RACI in textbook development strengthens the manageability of interaction among authors, literary and technical editors, infographic designers, layout specialists, and professionals responsible for digital components. For tasks associated with infographics and data visualization, the matrix helps correct a typical distributed-responsibility error: the author is accountable for the correctness of content and source data (Responsible), the editor for methodological and terminological alignment with the text, while approval of the final visual solution is anchored in a specific role (Accountable) so as to avoid multiple competing "final" approvals. At the same time, consulted parties (for example, a subject expert or methodologist) and informed participants (project coordinator, proofreading, layout) are defined in advance, which reduces the transaction costs of communication, increases process transparency, and strengthens the expert robustness of outcomes through a reproducible mechanism of decision-making.

Risk Management: A Psychological Perspective

The risk profile of educational projects—including schedule failures, unavailability of key experts, and the discovery of methodological errors at late stages—can be reduced not only through formal planning procedures, but also through managed mechanisms from organizational psychology. A climate of trust functions here as a preventive instrument: under conditions of psychological safety, participants signal overload, data deficits, doubts about methodological decisions, or technological constraints in a timely manner, making it possible to identify deviations at an early phase and convert them into manageable risks rather than crisis events [6]. In the absence of trust, problems tend to accumulate latently and surface at the most costly point—during manuscript integration, external peer review, or release preparation.

To effectively operationalize this psychological safety, specific organizational risks inherent in digital transformation must be explicitly managed, most notably resistance to change and cognitive overload. Resistance frequently emerges as low motivation during the transition from traditional to digital-first workflows; this can be mitigated by applying Self-Determination Theory (SDT) 'Autonomy' interventions, allowing authors to co-design their sprint goals and instructional methods. Concurrently, the rapid iterative cycles characteristic of Agile can induce cognitive overload and author burnout. Addressing this requires the deliberate implementation of 'sustainable pace' principles to protect the 'Relatedness' of the team, preventing isolation and ensuring psychological well-being during high-velocity production.

Flexible replanning within Agile logic complements the psychological contour of risk management with an operational mechanism of rapid adaptation. Iterative work organization, supported by workflow visualization and regular status checks, enables prompt reallocation of resources, reprioritization, and adjustment of workload within a sprint or between iterations when unforeseen circumstances occur [11]. When an expert is temporarily unavailable or a methodological inconsistency is detected, rapid compensatory actions become feasible: task reassignment, involvement of a backup specialist, decomposition of a problematic block, and its revision without stopping the entire production chain. In this way, risk management becomes dynamic and rests on a combination of trusting communication and structured Agile practices, increasing project resilience to uncertainty and reducing the likelihood of a cascading delay effect.

CONCLUSION

The study's final results indicate that designing effective professional development programs for authors and

editors of educational literature in Kazakhstan objectively presupposes a shift toward a multidimensional educational model. The combination of the Cambridge tradition—with its emphasis on validity, evidence-based design, and activity-oriented learning formats—with Agile methodologies and the network logic of connectivism forms a methodologically coherent foundation for renewing professional practices in the sector.

Within the completed work, the stated research targets have been achieved: the need for systemic transformation in the publishing segment was substantiated against the backdrop of declining volume and influence of traditional book-publishing formats; the psychological determinants shaping productive creative teams were analyzed; Agile and PMBOK tooling was adapted to the specifics of educational content development; and a model of continuous professional development based on Personal Learning Networks was proposed. The formulated hypothesis received empirical-consideration support: integrating international experience with a project-oriented lens of process management makes it possible to improve both the quality and the expert robustness of learning materials while rationalizing time and financial expenditures.

Implementation of the proposed program, structured as five modules, enables the preparation of a new generation of specialists capable of producing competitive educational content aligned with the conditions of the digital era and with the national standards of the Republic of Kazakhstan. The conclusions and propositions presented have practical value for a wide range of professional groups—from state regulators and specialized institutes to leaders and managers of private publishing houses seeking to achieve a level of textbook quality comparable with international practices.

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