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MEDIA COMPETENCE AND MEDIA ART: A PILOT STUDY OF A CANVA AND WORDWALL/ LEARNINGAPPS WORKSHOP FOR TEACHERS IN ALMATY

Abstract. This pilot study examined whether participation in a short, practice-oriented workshop based on Canva and Wordwall/LearningApps was associated with short-term changes in the self-assessed media competence of in-service school teachers working under Kazakhstan's updated content of education. A one-group pretest–posttest design was used with a convenience sample of 26 teachers from eight general education schools in Almaty. Media competence was assessed with a nine-indicator self-assessment instrument developed for the workshop (four-point scale) covering cognitive, technological, methodological, and aesthetic-reflective domains; a readiness item served as a secondary measure. The overall score (percentage of the maximum possible score) increased from 16.7% before the workshop to 82.8% immediately after it (Wilcoxon $z = -4.46$, $p < .001$; $d_z = 3.27$, 95% CI [2.28, 4.24]), and changes in all nine indicators remained significant after Holm–Bonferroni correction. Gains were of similar size across the four domains (62.8–70.5 percentage points), although two participants changed very little. Because the design lacked a control group, relied on self-assessment, and used a small local sample, these results are interpreted as preliminary evidence of short-term change associated with workshop participation rather than as a causal effect. They suggest that accessible cloud-based tools may support rapid growth in teachers' confidence in producing digital learning resources; whether this growth reflects demonstrated competence, including the quality of visual design, requires performance-based assessment. The study outlines a professional-development model for resource-constrained school contexts that warrants testing with controlled and longitudinal designs.

Keywords: Canva, Kazakhstan, media art, media competence, teacher professional development, updated content of education, Wordwall

Introduction

The digitalization of school education has become a strategic priority in Kazakhstan, but the pace of technological adoption has been uneven across schools and teacher groups. International readers may not immediately recognize the local term “updated content of education,” which refers to the large-scale curriculum renewal introduced through piloting from 2015 and then expanded across mainstream schools. This reform changed not only curricular content but also pedagogical expectations, assessment practices, and the use of student-centered and competency-based approaches in everyday teaching. In practice, the reform increased pressure on teachers to design or adapt digital learning resources rather than rely exclusively on static textbook materials (Yakavets et al., 2023).

At the classroom level, this policy shift created a practical contradiction. Teachers are expected to organize active, visually engaging, and formative learning with digital support, yet many still work under time constraints, uneven infrastructure, and limited access to extended professional development. A systematic review of research on teachers' digital competence found that many studies still rely on self-report data (Smestad et al., 2023), and a survey of primary school teachers in Almaty showed that their technological competence and digital literacy lag behind their pedagogical

competence (Orakova et al., 2024). This gap is especially important in contexts where schools need scalable solutions that function with ordinary devices and limited budgets.

In this article, media competence is treated as a teaching-related capacity that integrates technological use, pedagogical design, and reflective visual judgment. It is narrower than digital competence in the DigCompEdu sense, which also covers professional engagement, assessment, and learner empowerment (Redecker, 2017), and is closest to the DigCompEdu area of digital resources, that is, the selection, creation, and modification of digital learning materials (Heine et al., 2023). The term media art is used in an applied educational sense rather than in a narrow fine-arts sense: it refers to the creation of multimodal, visually structured, and interactive learning products that combine text, image, layout, motion, and user interaction. Media art is therefore treated not as a separate competence but as the productive-aesthetic facet of media competence: the point at which technological knowledge, pedagogical intention, and subject content (Mishra & Koehler, 2006) are expressed in the visual and interactive form of a teacher-made resource. This framing is justified because teachers working with cloud-based design and gamification platforms do more than operate software; they shape visual communication, instructional sequencing, and learner participation through media forms. For that reason, Canva and Wordwall can be examined not only as digital tools but also as accessible media art technologies for school practice.

Operationally, the study does not measure media art with a separate scale. The media art facet is captured by the indicators that concern the form and interactivity of teacher-made products: integrating multimedia content (Indicator 4), designing game-based interaction (Indicators 5 and 6), and using advanced graphic functions in Canva (Indicator 8). The remaining indicators capture the underlying knowledge and the technical and methodological conditions for such production (see the Instruments section and Table 4). Accordingly, statements about media art in this article refer only to these indicators and should not be read as an assessment of artistic quality in a broader sense.

The choice of platforms is also contextually important. Canva allows teachers to create and personalize lesson plans, infographics, posters, videos, worksheets, and presentations through a drag-and-drop interface, while Wordwall offers more than 30 interactive activity types, assignment options, printable output, and device-flexible delivery (Canva, n.d.; Wordwall, n.d.). LearningApps provides additional interactive and multimedia learning blocks and remains widely used in post-Soviet educational contexts because of its multilingual interface and free access model (LearningApps.org, n.d.). Together, these platforms fit the needs of schools that require low-threshold tools for immediate instructional use rather than expensive immersive technologies.

The present study responds to a gap in the literature. Recent scholarship has produced strong conceptual and comparative work on teacher digital competence, but much of it focuses on higher education, pre-service teachers, or broad competence frameworks rather than short, school-based interventions with practicing teachers (Basilotta-Gómez-Pablos et al., 2022; Cabero-Almenara et al., 2023; Fernández-Morante et al., 2023; Suzer & Koc, 2024). Empirical evidence from Kazakhstan is growing but remains largely survey-based (Niyazova et al., 2022; Orakova et al., 2024), and there is little quantitative research examining whether brief, affordable training around specific cloud platforms is accompanied by changes in teachers' competence profiles under the conditions of curriculum renewal. The purpose of this pilot study was therefore to describe short-term changes in the media competence of in-service teachers from general education schools in Almaty that were associated with participation in a one-day workshop based on Canva and Wordwall/LearningApps.

Literature Review

Recent literature converges on the idea that teacher digital competence is multidimensional. Framework-oriented studies consistently move beyond narrow technical literacy and emphasize combinations of professional engagement, digital resource design, teaching and learning, assessment, learner support, and reflective adaptation (Caena & Redecker, 2019; Redecker, 2017). Large-scale empirical studies based on DigCompEdu and related models likewise show that competence levels vary by context, professional role, and prior experience, while methodological and pedagogical dimensions often remain less developed than basic operational skills (Lucas, Bem-Haja, et al., 2021; Suzer & Koc, 2024). Instruments designed specifically for primary and secondary school teachers

have also been developed and applied (Tzafilkou et al., 2023), which matters because the tasks of school teachers differ from those of university lecturers.

Systematic reviews also point to unresolved issues that are directly relevant to the present study. Smestad et al. (2023) found that many studies do not clearly distinguish who benefits from teacher digital competence or how competence translates into concrete classroom design. Basilotta-Gómez-Pablos et al. (2022) similarly noted that the literature often overrepresents higher education and underexplores school-based interventions that connect competence development to authentic teaching tasks. The field therefore has well-developed frameworks but relatively few compact intervention studies that show what teachers can actually learn in short, practice-oriented formats.

A second strand of literature concerns teacher professional development in digital environments. Reviews of technology-enabled teacher professional development show that structured interventions can improve teachers' knowledge and instructional confidence, especially when training is active, collaborative, and directly linked to teaching practice (Amemasor et al., 2025; Huang et al., 2024). A DigCompEdu-aligned pilot training program in Portugal likewise illustrates how compact, structured formats can be used to develop in-service teachers' digital competence (Lucas, Dorotea, & Piedade, 2021). However, these reviews also report uneven attention to feedback, reflection, equity, and sustained follow-up. This means that short workshops may succeed in triggering immediate skill gains but still leave unresolved questions about long-term transfer and depth of competence.

A third strand addresses gamification and interactive instructional design. Reviews of gamification in education generally report positive effects on engagement and motivation, especially when the activity design is closely aligned with learning goals rather than used as superficial entertainment (Ruiz et al., 2024). What matters for teachers is not the abstract presence of game elements, but the ability to embed those elements into purposeful classroom tasks. Wordwall and LearningApps are relevant here because they translate gamified interaction into formats teachers can produce quickly and modify for different subjects and grade levels.

The visual dimension of digital teaching deserves separate attention. Canva is pedagogically attractive because it lowers the entry barrier to visual communication, yet visual literacy does not develop automatically through access to templates. Research on teacher competence suggests that operational familiarity with tools can grow faster than reflective design judgment, aesthetic balance, or multimodal coherence (Fernández-Morante et al., 2023; Gutiérrez-Castillo et al., 2023). For this reason, the present study examined the aesthetic-reflective component separately from the technological and methodological components.

Kazakhstan is a relevant setting for this kind of study. National and international analyses of educational change in the country show that curriculum renewal has increased expectations for more active, flexible, and technology-supported pedagogy, while teachers still face diverse local conditions in implementation (Yakavets et al., 2023). School-based surveys point in the same direction: a survey of 2,840 teachers in the Turkestan region, which also examined how teachers develop multimedia educational materials, concluded that urgent measures were needed to build teachers' digital competencies (Niyazova et al., 2022), and a study of 223 primary school teachers in Almaty found that their digital literacy and technological competence were at a moderate level, whereas their pedagogical competence was high (Orakova et al., 2024). A recent case study from Kazakhstan also links teachers' digital literacy to their ability to design engaging learning environments and to integrate digital tools into instruction (Temirkhanova et al., 2024). Yet there remains little evidence on short interventions centered specifically on widely accessible cloud platforms. The present pilot study responds to that gap by examining whether participation in a one-day workshop was accompanied by measurable short-term changes across cognitive, technological, methodological, and aesthetic-reflective components of teacher media competence.

Methods and materials

Research Design

The study used a quantitative evaluative design with quasi-experimental features, specifically a

one-group pretest–posttest model (Shadish et al., 2002). This design was selected because the workshop was delivered in a real professional-development setting and the immediate goal was to capture competence change under natural conditions rather than to build a tightly controlled laboratory comparison. The approach is therefore appropriate for pilot-level intervention evaluation, although it does not permit causal claims. Accordingly, results are reported as pre–post changes associated with workshop participation, not as effects of the workshop, and threats to internal validity such as testing, expectancy, and novelty effects are considered in the Discussion.

Participants and Setting

The sample was formed through convenience recruitment among teachers who had expressed a need to learn how to design their own digital educational resources. Participation criteria were at least two years of teaching experience, basic digital literacy, regular use of ready-made digital materials in lessons, and no prior experience of independently creating interactive tasks. The final sample included 26 teachers from eight general education schools in Almaty during March and April 2025. Because the study concerned in-service teacher development rather than student achievement, all participants were adult professionals. As recruitment was by convenience within one city, the sample is not representative of teachers in Kazakhstan, and the findings are interpreted only for this group.

The disciplinary composition of the sample reflected the practical diversity of mainstream school staffing. Eight participants were primary school teachers (30.8%), seven taught language subjects (26.9%), five taught natural sciences (19.2%), three taught social sciences or humanities (11.5%), and three taught mathematics or informatics (11.5%). The mean age was 34.6 years ($SD = 6.2$), and the mean teaching experience was 7.8 years ($SD = 3.4$). The profile describes a mid-career cohort rather than novice teachers. Although experienced in teaching, these teachers had not previously created interactive resources themselves, which is consistent with the low pretest self-ratings reported below.

Table 1
Participant Profile (N = 26)

Variable	Value
Schools	8 general education schools in Almaty
Data collection period	March–April 2025
Mean age	34.6 years ($SD = 6.2$)
Mean teaching experience	7.8 years ($SD = 3.4$)
Primary teachers	8 (30.8%)
Language teachers	7 (26.9%)
Natural sciences	5 (19.2%)
Social sciences/humanities	3 (11.5%)
Mathematics/informatics	3 (11.5%)

Note. Values are n (%) unless otherwise indicated. SD = standard deviation.

Intervention

The intervention was a one-day online intensive workshop entitled “Designing an Interactive Educational Environment with Canva and Wordwall/LearningApps.” The total duration was six academic hours. The workshop format was deliberately practice-oriented because the target problem was not abstract awareness of digital tools but teachers’ ability to produce classroom-ready resources within the constraints of ordinary school work. Each participant worked with tasks related to their own subject area and grade level.

The workshop consisted of four stages. First, the diagnostic stage included pretesting. Second, the cognitive stage introduced the instructional affordances of the selected platforms in relation to digital resource design under the updated curriculum. Third, the activity stage focused on hands-on

creation of multi-page learning materials in Canva, including worksheets, visual explanations, and infographic elements, together with game-based exercises in Wordwall/LearningApps, such as quizzes, matching activities, and formative assessment tasks. Fourth, the reflective-evaluative stage included posttesting, a readiness questionnaire, and short pedagogical reflection on classroom transfer.

In the activity stage, all participants worked in Canva for the visual component. Wordwall and LearningApps were introduced as two interchangeable tools for the game-based component because they offer comparable template-based activity types (quizzes, matching, sorting); each participant chose one of the two platforms for the game-based tasks (Wordwall: $n = 11$; LearningApps: $n = 15$). The instrument assessed the game-based component with platform-neutral indicators (Indicators 5 and 6 refer to Wordwall/LearningApps jointly), the platform subgroups were self-selected and too small for separate comparison, and all tools were used within one integrated workshop. Consequently, the design does not allow the observed changes to be attributed to any single platform; the results refer to the workshop as a whole.

Table 2
Workshop Structure and Data Sources

Stage / source	Duration or format	Focus
Diagnostic stage	1 academic hour	Pretest of nine competence indicators
Cognitive stage	1 academic hour	Instructional affordances of Canva and Wordwall/LearningApps
Activity stage	3 academic hours	Creation of visual and interactive materials for participants' own subjects
Reflective–evaluative stage	1 academic hour	Posttest, readiness questionnaire, short pedagogical reflection
Readiness item	Single self-report item, end of workshop	Intended classroom use of self-created materials within two weeks (secondary outcome)

Instruments

Data were collected with two instruments. The core instrument was a structured Google Forms self-assessment questionnaire containing nine indicators of teacher media competence (the full list is given in Table 4), each rated on a four-point scale. The indicators are grouped into four domains, and this structure is used consistently throughout the article: a cognitive domain (one indicator: knowledge of interactive learning principles; Indicator 1), a technological domain (three indicators: navigation and account setup in the platforms, integration of multimedia content, and organization of synchronous and asynchronous online polling; Indicators 2, 4, and 9), a methodological domain (four indicators: designing the structure of a digital learning module, understanding game mechanics in Wordwall/LearningApps, creating interactive exercises, and adapting templates to subject and grade level; Indicators 3, 5, 6, and 7), and an aesthetic-reflective domain (one indicator: using advanced graphic functions in Canva; Indicator 8).

Participants rated themselves on each indicator against the following level descriptors: 1 = not demonstrated (the action cannot yet be performed); 2 = partially demonstrated (the action is performed only with step-by-step guidance); 3 = demonstrated (the action is performed independently with minor errors); 4 = highly demonstrated (the action is performed independently and can be adapted to a new subject or task). All competence ratings were self-assessments. Each participant completed the same questionnaire individually at pretest (diagnostic stage), before any instruction, and at posttest (reflective-evaluative stage), after completing the practical tasks. To reduce the vagueness typical of confidence ratings, each level was described in terms of a concrete action that the participant could or could not perform, and participants rated themselves with reference to the

tasks they had actually attempted. No external rating of the participants' products was carried out, so the scores reflect perceived rather than independently verified competence.

For reporting, ratings were converted to percentages of the maximum possible score: for each indicator, percentage score = $(\text{mean rating} - 1) \div 3 \times 100$, so that a rating of 1 corresponds to 0% and a rating of 4 to 100%. Domain scores are unweighted means of the indicator percentages within each domain, and the overall score is the unweighted mean of all nine indicator percentages; all indicators therefore carry equal weight. For example, a mean indicator rating of 1.5 corresponds to $(1.5 - 1) \div 3 \times 100 = 16.7\%$.

Content validity was addressed by aligning the indicators with the DigCompEdu areas of digital resources and teaching and learning (Redecker, 2017) and with the tasks practiced in the workshop. Before the workshop, the indicators were also reviewed by three experts holding doctoral or candidate degrees in pedagogical sciences; the content validity index (CVI) was .89. Internal consistency of the nine indicators was Cronbach's $\alpha = .76$ at pretest and $\alpha = .92$ at posttest. Because the instrument was developed for this workshop and has not undergone full psychometric validation (e.g., factor analysis), and because the cognitive and aesthetic-reflective domains are each represented by a single indicator, the study is interpreted as an applied pre-post evaluation rather than an instrument-validation project, and single-indicator domain scores are interpreted descriptively.

The secondary instrument was a readiness item administered at the end of the workshop, which asked participants how likely they were to use the resources they had created in their own teaching during the following two weeks. Responses were given on a five-point scale (1–5), with higher values indicating greater readiness, and participants who chose 4 or 5 were classified as ready. Because it is a single, non-validated self-report item, readiness is reported descriptively as a secondary outcome and is not used to support the main conclusions. The facilitator monitored task completion during the workshop for organizational purposes only; this monitoring was not systematically recorded or analyzed and is therefore not treated as a data source.

Data Analysis

Statistical analyses were conducted in Python 3 with the SciPy library (version 1.17). The Shapiro–Wilk test showed that the pre-post differences in the overall score deviated from normality ($W = .83$, $p = .001$), mainly because two participants changed very little. The overall score was therefore compared between pretest and posttest with the Wilcoxon signed-rank test, with the effect size $r = |z| / \sqrt{N}$, where N is the number of pairs. For comparability with other pre-post studies, a paired-samples t test and Cohen's d for dependent samples, $d_z = M_{\text{diff}} / SD_{\text{diff}} = t / \sqrt{n}$, are also reported, with a 95% confidence interval (CI) based on the noncentral t distribution and Hedges' small-sample corrected value g_z (Lakens, 2013); effect sizes were interpreted with conventional benchmarks (Cohen, 1988). Because individual indicators are single ordinal items, indicator-level pre-post differences were also tested with the Wilcoxon signed-rank test (normal approximation with correction for ties). To control the familywise error rate across the nine indicator tests, p values were adjusted with the Holm–Bonferroni procedure (Holm, 1979). Domain scores were not tested separately because they are aggregates of the same indicators. Internal consistency was estimated with Cronbach's α . The significance level was set at $\alpha = .05$.

Ethical Considerations

The study was approved by the Ethics Committee of Abai Kazakh National Pedagogical University (Protocol No. 16, March 9, 2025). Participation was voluntary. Before the pretest, all participants received information about the aims and procedures of the study and gave informed consent. Responses were anonymized before analysis, and data are reported only in aggregated, de-identified form. No procedure in the workshop involved physical or psychological risk beyond ordinary professional training activity.

Results

The pretest–posttest comparison showed a large increase in the overall self-assessed media competence score. The mean overall score increased from 16.7% ($SD = 9.8$) before the workshop to 82.8% ($SD = 19.6$) immediately after the workshop, $M_{\text{diff}} = 66.1$ percentage points, 95% CI [57.9,

74.3]. The overall score increased for all 26 participants (Wilcoxon $z = -4.46$, $p < .001$, $r = .87$), and the paired t test led to the same conclusion, $t(25) = 16.67$, $p < .001$, $d_z = 3.27$, 95% CI [2.28, 4.24], $g_z = 3.17$. The standardized change is very large; however, because there was no control group and the scores are self-assessments, it represents a short-term change in perceived competence associated with workshop participation rather than a demonstrated effect of the workshop.

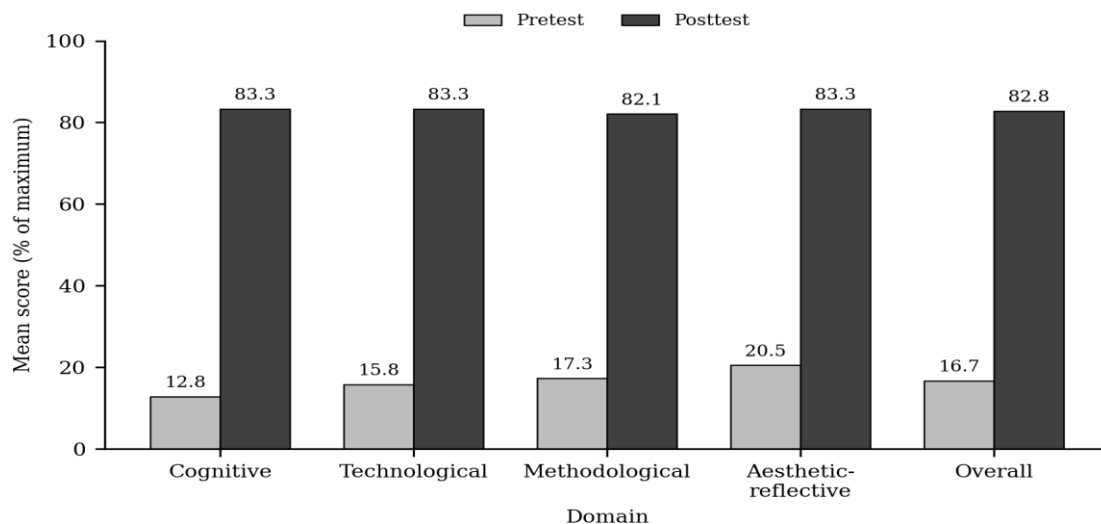
Domain-level averages are shown in Table 3 and Figure 1. The cognitive domain increased from 12.8% to 83.3%, the technological domain from 15.8% to 83.3%, the methodological domain from 17.3% to 82.1%, and the aesthetic-reflective domain from 20.5% to 83.3%. Because the cognitive and aesthetic-reflective domains each consist of a single indicator, their domain scores coincide with the corresponding indicator scores and are interpreted descriptively. The gains were of similar size in all four domains (62.8–70.5 percentage points). The aesthetic-reflective domain had the highest pretest score and the smallest gain, but the difference from the other domains was small: in this sample, self-rated visual-design skills changed at roughly the same pace as operational and instructional-design skills.

Table 3
Pretest and Posttest Scores by Domain

Domain	Pretest (%)	Posttest (%)	Gain (pp)
Cognitive (1)	12.8	83.3	+70.5
Technological (2, 4, 9)	15.8	83.3	+67.5
Methodological (3, 5–7)	17.3	82.1	+64.7
Aesthetic-reflective (8)	20.5	83.3	+62.8
Overall (1–9)	16.7	82.8	+66.1

Note. pp = percentage points. Scores are percentages of the maximum possible score (see the Instruments section); domain and overall scores are unweighted means of the indicator percentages in Table 4. Indicator numbers are given in parentheses.

Figure 1
Pretest and Posttest Mean Percentage Scores by Domain



Note. Scores are percentages of the maximum possible score. The cognitive and aesthetic-reflective domains consist of one indicator each. $N = 26$.

Indicator-level results are presented in Table 4. The largest gains were recorded for organizing synchronous and asynchronous online polling (+73.1 percentage points), knowledge of interactive

learning principles (+70.5), and designing the structure of a digital learning module (+69.2). The smallest gains were found for creating interactive exercises (+59.0), platform navigation and account setup (+62.8), and using advanced graphic functions in Canva (+62.8). After Holm–Bonferroni adjustment, all nine changes remained significant (all adjusted $p < .001$), with effect sizes from $r = .86$ to $r = .89$. No participant gave a lower rating at posttest than at pretest on any indicator. Given the narrow range of gains (59.0–73.1 percentage points), differences between individual indicators should not be over-interpreted.

Individual trajectories were less uniform than the group means suggest. Twenty-four participants increased their overall score by 44.4 to 92.6 percentage points, whereas two participants, both from the LearningApps subgroup, changed by only 7.4 and 11.1 percentage points. These two cases account for the deviation of the pre–post differences from normality noted above and indicate that the workshop format did not work equally well for everyone. For descriptive purposes only, the mean overall gain was 68.7 percentage points ($SD = 13.1$) in the Wordwall subgroup ($n = 11$) and 64.2 percentage points ($SD = 24.5$) in the LearningApps subgroup ($n = 15$). Because the subgroups were self-selected and small, and the difference between them depends largely on the two low-change participants, these figures are not interpreted as a platform effect.

The readiness item provides secondary, descriptive context for these findings. After the workshop, 24 of the 26 participants (92.3%) chose 4 or 5 on the five-point scale and were classified as ready to use self-created materials within the following two weeks (19 chose 5 and five chose 4). The two participants who chose 1 were the same two who showed little change in competence. Although self-reported readiness should not be equated with actual classroom implementation, the result still matters because the materials were created for real lessons rather than for abstract demonstration purposes.

Table 4
Indicator-Level Change in Media Competence

No.	Indicator	Domain	Pre (%)	Post (%)	Gain (pp)	z	p_{Holm}	r
1	Knowledge of interactive learning principles	Cognitive	12.8	83.3	+70.5	−4.37	< .001	.86
2	Navigation and account setup in the platforms	Technological	16.7	79.5	+62.8	−4.45	< .001	.87
3	Designing the structure of a digital learning module	Methodological	14.1	83.3	+69.2	−4.45	< .001	.87
4	Integrating multimedia content (video, audio, links)	Technological	17.9	84.6	+66.7	−4.45	< .001	.87
5	Understanding game mechanics in Wordwall/LearningApps	Methodological	17.9	83.3	+65.4	−4.52	< .001	.89
6	Creating interactive exercises for digital resources	Methodological	20.5	79.5	+59.0	−4.45	< .001	.87
7	Adapting templates to subject and grade level	Methodological	16.7	82.1	+65.4	−4.38	< .001	.86
8	Using advanced graphic functions in Canva	Aesthetic-reflective	20.5	83.3	+62.8	−4.48	< .001	.88
9	Organizing synchronous and asynchronous online polling	Technological	12.8	85.9	+73.1	−4.38	< .001	.86

Note. Pre and Post are percentages of the maximum possible score; Gain is in percentage points (pp). z = standardized Wilcoxon signed-rank statistic; p_{Holm} = p value adjusted with the Holm–Bonferroni procedure across the nine tests; $r = |z| / \sqrt{N}$ ($N = 26$ pairs).

Discussion

The findings are consistent with the view that participation in narrowly targeted, practice-based training built on accessible cloud-based tools can be accompanied by substantial short-term gains in in-service teachers' self-assessed competence, particularly when training is connected to immediate teaching needs. The size of the pre–post change in this study should not be compared directly with effects reported in reviews of technology-related interventions (Huang et al., 2024), because one-group pre–post designs typically yield larger standardized changes than designs with a comparison group, and because intervention length, instruments, and samples differ across studies. This caution applies with particular force here: the standardized change reported above is far larger than is typical of professional-development research, which is what would be expected when a low self-rated baseline, a single group, self-assessment, and an immediate posttest are combined. What is more defensible is the cautious conclusion that short professional-development formats may be efficient when they focus on specific production tasks teachers can complete and immediately reuse.

Contrary to what the literature led us to expect, gains were not concentrated in the technological and methodological dimensions: self-ratings in the aesthetic-reflective dimension rose almost as much. Previous research suggests that operational competence and pedagogical application often develop earlier than deeper reflective or design-oriented expertise (Fernández-Morante et al., 2023; Lucas, Bem-Haja, et al., 2021). The present data do not so much contradict this view as show the limits of self-assessment for testing it. Teachers who had just produced their first visually attractive materials with Canva templates may reasonably have felt far more capable in graphic design, but a self-rating cannot show whether composition, visual hierarchy, stylistic restraint, and multimodal coherence improved to the same extent. The media art framing used in this article is useful precisely because it separates these questions: the productive-aesthetic facet of media competence needs to be assessed through the products themselves.

The Wordwall/LearningApps results can be read in a similar way. The large gains in understanding game mechanics (+65.4 percentage points) and in organizing online polling (+73.1, the largest of all indicators) suggest that teachers found the platform logic intuitive and instructionally transferable. This is consistent with broader research on gamified learning, which shows that game-like structure can support engagement when it is tied to concrete educational purposes rather than treated as a novelty effect (Ruiz et al., 2024). In this study, a plausible explanation is that the template-based logic of these tools transformed a difficult design task into a set of manageable, editable templates that teachers could align with their own classroom content. Because Wordwall and LearningApps were assessed jointly within an integrated workshop, however, this interpretation cannot be tested separately for each platform.

The Canva results require a more differentiated interpretation. Canva appeared useful for preparing worksheets, explanations, and visually structured resources, and self-rated use of advanced graphic functions rose by 62.8 percentage points, close to the gains for the other indicators. Template-based accessibility supports entry into digital production. However, the broader literature on digital competence repeatedly warns against collapsing tool use, pedagogical effectiveness, and aesthetic judgment into a single undifferentiated construct (Gutiérrez-Castillo et al., 2023; Smestad et al., 2023), and self-assessment is poorly suited to separating them. Whether mature visual literacy can develop in a one-day format therefore remains an open question.

The Kazakhstan context helps explain why these results matter beyond the immediate workshop. Under the updated content of education, teachers are expected to move toward more active, formative, and flexible classroom design. However, national reform pressures do not automatically provide schools with costly technology infrastructure. In such circumstances, low-threshold platforms that operate across common devices and freemium access models become important because they allow teachers to produce usable digital resources without waiting for expensive infrastructure. The findings therefore speak directly to the practical conditions of curriculum implementation in resource-constrained school systems.

Several limitations must be stated clearly. First, the sample of 26 teachers from eight Almaty schools was small and recruited by convenience, which limits generalization beyond this group; the study should be read as a pilot, and its findings do not describe teachers in Kazakhstan as a whole.

Second, the study used a one-group pretest–posttest design, so testing effects, novelty effects, expectancy and social desirability effects, and short-term enthusiasm cannot be separated from workshop participation. Third, the posttest was administered immediately after the workshop, which means the study does not show whether the gains were sustained over time or transferred into stable classroom routines. Fourth, the competence instrument was applied as an evaluative workshop tool rather than a fully validated scale, and two of its four domains are represented by a single indicator. Fifth, all competence ratings were self-assessments, so the study shares the reliance on self-report noted in the literature (Smestad et al., 2023). Self-ratings given immediately after an engaging workshop may be inflated by social desirability, and they are also open to response-shift bias: after the workshop, participants may understand the skills differently and therefore use the rating scale differently than at pretest. The results are therefore best interpreted as pilot evidence of change in perceived competence rather than as a definitive measurement of teachers' demonstrated media competence. In addition, the very low pretest self-ratings, which match the inclusion criterion of no prior experience in creating interactive tasks, and the concentration of posttest ratings near the top of the scale mean that the size of the change partly reflects where participants started, and that ceiling effects may have compressed differences between indicators. Sixth, because all tools were used in one integrated workshop and the game-based component was assessed jointly for Wordwall and LearningApps, the observed changes cannot be attributed to a specific platform.

Conclusion

This pilot study found that participation in a short intensive workshop built around Canva and Wordwall/LearningApps was associated with a large short-term increase in the self-assessed media competence of 26 in-service teachers from general education schools in Almaty. The overall gain of 66.1 percentage points suggests that even a compact intervention may be accompanied by substantial change when it is grounded in concrete classroom production tasks; in the absence of a control group, however, this change cannot be attributed causally to the workshop. Gains were of similar size in all four domains, while two of the 26 participants changed very little, which shows that the format did not suit everyone equally.

Within these limits, the study suggests three tentative conclusions. First, accessible cloud platforms may serve as realistic entry points for teacher-created digital educational resources in schools that do not have the budget, time, or technical support required by more complex systems. Second, teachers' self-assessed technological, methodological, and aesthetic-reflective skills appear to improve rapidly in short-term formats, especially when teachers create resources for their own classes during training. Third, self-assessment alone cannot show whether advanced visual literacy and design judgment develop in a one-day format; this question requires assessment of the materials that teachers produce.

From a professional-development perspective, the findings and their limitations point to a tiered model rather than a one-size-fits-all approach. A first level can focus on rapid-entry competence with Canva and Wordwall for immediate classroom use. A second level should address visual literacy, design thinking, and iterative peer feedback. A third level could move toward subject-specific repositories, collaborative adaptation, and evidence of classroom impact. Such differentiation is more realistic than expecting one short training event to produce both operational fluency and advanced media art skills.

Future research should extend this pilot in several directions. Replication with larger samples drawn from different regions of Kazakhstan, including rural schools, is needed before the findings can be generalized. Longitudinal studies are needed to determine whether post-workshop gains are maintained over time. Controlled designs would help separate intervention effects from testing or novelty effects, and designs that vary the platform would clarify the specific contribution of each tool. Because competence in this pilot was self-assessed, future studies should also evaluate teacher-made products with a performance-based rubric applied by independent trained raters, so that perceived and demonstrated competence can be compared. Finally, the next stage of inquiry should move from teacher competence alone to student-level consequences, including engagement, formative

assessment quality, and learning outcomes in classrooms where teacher-created digital resources are implemented regularly.

Conflict of Interest

The authors declare no conflict of interest.

Ethical Approval

The study was approved by the Ethics Committee of Abai Kazakh National Pedagogical University (Protocol No. 16, March 9, 2025). All participants gave informed consent before participation, participation was voluntary, and data were anonymized.

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**МЕДИА ҚҰЗЫРЕТТІЛІК ЖӘНЕ МЕДИА ӨНЕР: АЛМАТЫ
МУҒАЛІМДЕРІНЕ АРНАЛҒАН CANVA ЖӘНЕ**

WORDWALL/LEARNINGAPPS СЕМИНАРЫНЫҢ ПИЛОТТЫҚ ЗЕРТТЕУІ

Аңдатпа. Бұл пилоттық зерттеуде Canva және Wordwall/LearningApps негізіндегі қысқа, практикаға бағытталған семинарға қатысудың Қазақстанның жаңартылған білім мазмұны аясында жұмыс істейтін мектеп мұғалімдерінің медиа құзыреттілігіндегі (өзін-өзі бағалау бойынша) қысқа мерзімді өзгерістермен байланысы зерттелді. Бір топқа арналған алдын ала және қорытынды тестілеу дизайны қолданылды; қолжетімді іріктемеге Алматы қаласының сегіз жалпы білім беретін мектебінің 26 мұғалімі енді. Медиа құзыреттілік семинар үшін әзірленген, мұғалімдердің өзін-өзі бағалауына негізделген, когнитивтік, технологиялық, әдістемелік және эстетикалық-рефлексиялық домендерді қамтитын тоғыз көрсеткішті құралмен (төрт балдық шкала) бағаланды; жасалған материалдарды пайдалануға дайындық туралы сұрақ қосымша көрсеткіш ретінде қолданылды. Жалпы көрсеткіш (ең жоғары мүмкін балдың пайызымен) семинарға дейінгі 16,7%-дан семинардан кейін бірден 82,8%-ға дейін өсті (Уилкоксон критерийі $z = -4,46$, $p < .001$; $d_z = 3,27$, 95% СА [2,28; 4,24]); тоғыз көрсеткіштің барлығындағы өзгерістер Холм–Бонферрони түзетуінен кейін де мәнді болып қалды. Өсім төрт доменде шамалас болды (62,8–70,5 пайыздық тармақ), алайда екі қатысушыда өзгеріс шамалы болды. Бақылау тобы болмағандықтан, бағалау өзін-өзі бағалауға негізделгендіктен және іріктеме шағын әрі жергілікті болғандықтан, нәтижелер дәлелденген себеп-салдарлық әсер ретінде емес, семинарға қатысумен байланысты қысқа мерзімді өзгерістер туралы алдын ала деректер ретінде қарастырылады. Олар қолжетімді бұлттық құралдар мұғалімдердің цифрлық оқу ресурстарын жасауға деген сенімділігінің жылдам өсуіне ықпал ете алатынын көрсетеді; бұл өсімнің нақты көрсетілген құзыреттілікті, соның ішінде визуалды дизайн сапасын, білдіретін-білдірмейтінін жасалған өнімдерді бағалау арқылы тексеру қажет.

Түйін сөздер: Canva, Қазақстан, медиа өнер, медиа құзыреттілік, мұғалімдердің кәсіби дамуы, жаңартылған білім мазмұны, Wordwall

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МЕДИАКОМПЕТЕНТНОСТЬ И МЕДИААРТ: ПИЛОТНОЕ ИССЛЕДОВАНИЕ СЕМИНАРА ПО CANVA И WORDWALL/LEARNINGAPPS ДЛЯ УЧИТЕЛЕЙ АЛМАТЫ

Аннотация. В данном пилотном исследовании изучалось, связано ли участие в кратком практико-ориентированном семинаре на основе Canva и Wordwall/LearningApps с краткосрочными изменениями медиакомпетентности (по самооценке) действующих учителей общеобразовательных школ, работающих в рамках обновлённого содержания образования Казахстана. Использовался дизайн с предварительным и итоговым тестированием одной группы; удобную выборку составили 26 учителей из восьми общеобразовательных школ Алматы. Медиакомпетентность оценивалась с помощью разработанного для семинара инструмента самооценки из девяти показателей (четырёхбалльная шкала), охватывающего когнитивный, технологический, методический и эстетико-рефлексивный домены; вопрос о готовности использовать созданные материалы служил дополнительным показателем. Общий показатель (в процентах от максимально возможного балла) вырос с 16,7% до семинара до 82,8% непосредственно после него (критерий Уилкоксона $z = -4,46$, $p < .001$; $d_z = 3,27$, 95% ДИ [2,28; 4,24]); изменения по всем девяти показателям остались значимыми после поправки Холма–Бонферрони. Прирост был сопоставим во всех четырёх доменах (62,8–70,5

процентного пункта), однако у двух участников изменения оказались незначительными. Поскольку контрольная группа отсутствовала, оценка строилась на самооценке, а выборка была небольшой и локальной, результаты рассматриваются как предварительные данные о краткосрочных изменениях, связанных с участием в семинаре, а не как доказанный причинный эффект. Они указывают на то, что доступные облачные инструменты могут способствовать быстрому росту уверенности учителей в создании цифровых учебных ресурсов; отражает ли этот рост реально продемонстрированную компетентность, в том числе качество визуального дизайна, требует проверки с помощью оценки созданных учителями продуктов.

Ключевые слова: Canva, Казахстан, медиаарт, медиакомпетентность, профессиональное развитие учителей, обновленное содержание образования, Wordwall

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