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INTERDISCIPLINARY INQUIRY-BASED LEARNING IN CREATIVE PEDAGOGY: STRATEGIES FOR ENGAGING STUDENTS IN RESEARCH

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Abstract. Creative Pedagogy is often taught as a set of methods for stimulating imagination, while research is taught as a separate, procedural skill. This literature-based thesis argues that interdisciplinary inquiry-based learning can bring the two together. It draws on research on creative pedagogies, inquiry-based and problem-based learning, interdisciplinary education and collaborative learning. The thesis proposes treating the disciplines that inform Creative Pedagogy, such as psychology, the arts, the humanities and digital technology, as complementary lenses through which students examine one educational problem. Each lens contributes its own questions, types of evidence and criteria for judging claims. Four strategies are discussed as stages of one inquiry cycle: interdisciplinary projects that frame the problem, inquiry tasks that build research questions, problem analysis that requires evidence from more than one discipline, and collaborative work in which ideas are presented and critically examined. The reviewed literature indicates that inquiry benefits from guidance, that interdisciplinary learning goals are difficult to define, and that research-based courses may strengthen research knowledge more readily than motivation. Practical recommendations for course design are formulated. No empirical data are reported.

Keywords: Creative Pedagogy; inquiry-based learning; interdisciplinary learning; student research; problem analysis; collaborative learning; higher education.

Introduction and relevance.

Students preparing to teach creatively are expected not only to apply creative methods but also to examine critically why and when these methods work. That requires research skills: formulating questions, investigating problems, weighing evidence and communicating conclusions. In many programmes, however, Creative Pedagogy is presented as a collection of techniques, and research methods are taught in a separate course. Students therefore seldom experience inquiry as part of creative educational work.

Creative Pedagogy is by nature interdisciplinary. In a systematic review, Cremin and Chappell (2021) described creative pedagogies through seven interrelated features: generating and exploring ideas, encouraging autonomy and agency, playfulness, problem-solving, risk-taking, co-construction and collaboration, and teacher creativity. Understanding any of these features draws on more than one field, for example developmental psychology for playfulness or the arts for idea generation. At the same time, the authors found the evidence that such practices increase students' creativity to be inconclusive, which is itself a reason to engage students in investigating the practices they will use. Interdisciplinary inquiry-based learning offers a format in which both aims can be pursued together.

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Aim of the thesis.

The aim of this thesis is to substantiate, on the basis of published research, how interdisciplinary inquiry-based learning can be organised within the subject of Creative Pedagogy so that students learn to identify research questions, explore problems, assess evidence and present their ideas. The thesis is theoretical and does not report empirical results.

Theoretical and methodological basis.

The thesis is based on a narrative review of four strands of literature. Inquiry-based learning. A meta-analysis by Lazonder and Harmsen (2016) found that guidance improves learners' inquiry activities, task performance and learning outcomes, with relatively larger benefits for inquiry skills than for content knowledge. De Jong et al. (2023) argued that inquiry and direct instruction should be combined rather than opposed, with the balance depending on learning goals, domain and prior knowledge. Problem-centred learning. Liu and Pásztor (2022) synthesised studies of problem-based learning in higher education and examined its effects on critical thinking, the capacity most directly involved in assessing evidence. Markula and Aksela (2022) showed that in project work, collaboration, artefact creation and the presentation of results are readily realised, whereas driving questions and student-generated questions are harder to implement.

Interdisciplinary education. Van den Beemt et al. (2020) reported that defining learning goals and assessment remains a central difficulty in interdisciplinary programmes, and that interdisciplinary skills require deliberate pedagogy and authentic teamwork. Perignat and Katz-Buonincontro (2019) found wide variation in how arts-integrated STEAM education combines disciplines and noted that creativity outcomes are rarely reported. Collaboration and research-based learning. The meta-analysis by Chen et al. (2018) found a positive effect of collaboration on knowledge, skills and perceptions in computer-supported learning. Wessels et al. (2021) observed that students in research-based courses improved in cognitive aspects of research competence, while most affective-motivational aspects declined; instructors' interest in students' work was associated with greater research interest.

Discussion.

Disciplines as lenses. The central proposition of this thesis is that interdisciplinarity in Creative Pedagogy should be organised around a shared educational problem rather than around topics from several subjects. For example, the problem of why pupils lose confidence in drawing at a certain age can be examined through developmental psychology (what changes in children's self-evaluation), art education (how drawing is taught and assessed) and sociology of education (which classroom norms reward realism). Each lens supplies distinct questions, sources and standards of evidence. This makes the comparison of perspectives, rather than the accumulation of facts, the core research activity.

Interdisciplinary projects as a frame. A semester project built around such a problem gives inquiry a purpose and an audience. Because interdisciplinary learning goals are hard to define (Van den Beemt et al., 2020), the project brief should state from the outset which research skills will be assessed and which disciplines must be represented.

Inquiry tasks for question formation. Since student-generated questions are among the most difficult elements of project work (Markula & Aksela, 2022), short structured tasks can precede the project: students list what each discipline already claims about the problem, identify contradictions between those claims, and reformulate a contradiction as a researchable question. In line with Lazonder and Harmsen

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(2016), brief prompts and worked examples are offered at this stage, with guidance reduced as students gain experience.

Problem analysis for evidence assessment. Students then gather sources from each lens and classify them by type, such as empirical study, theoretical argument or practitioner account. They compare what each type can and cannot establish. This is where critical thinking is exercised most directly, and where short episodes of direct instruction on evaluating sources may be useful (de Jong et al., 2023).

Collaborative work for presentation and critique. Teams in which members take responsibility for different lenses must integrate their findings into a single argument. Presentations to peers should include an account of disagreements between disciplines and how the team resolved or reported them. Collaboration supports knowledge and skill development (Chen et al., 2018). Given the risk of declining motivation in research-based courses (Wessels et al., 2021), teachers should also show genuine interest in students' questions and final products.

Conclusion and practical recommendations.

The reviewed literature suggests that interdisciplinary inquiry-based learning is well suited to Creative Pedagogy, because the subject draws on several fields and because its own evidence base invites investigation. Organising disciplines as lenses on a shared problem, and sequencing projects, inquiry tasks, problem analysis and collaboration as stages of one cycle, can make research an integral part of learning to teach creatively. This proposition requires empirical testing. Practical recommendations are: (1) select course problems that genuinely require at least two disciplinary perspectives; (2) teach question formation explicitly through contradiction-based inquiry tasks; (3) require students to classify and compare evidence from different disciplines; (4) assign disciplinary roles in teams and assess the integration of perspectives; (5) adjust guidance to students' experience, moving from worked examples to independent inquiry; and (6) use rubrics that assess questioning, evidence evaluation, integration and presentation separately. Design-based research comparing interdisciplinary and single-discipline inquiry in Creative Pedagogy courses would help test these recommendations.

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