



Critical Analysis of Future Teachers' Anticipatory Perspectives on Teaching Activity Automation

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Raoul Kamga, Professor
Université du Québec à Montréal, Canada
kamga_kouamkam.raoul@uqam.ca
<https://orcid.org/0000-0001-9997-1373>

Cendrine Mercier, Senior Lecturer
Nantes University, France
<mailto:cendrine.mercier@univ-nantes.fr>
<https://orcid.org/0000-0002-3921-583X>

Holly Many, Research Associate
University of Haute Alsace, France
holly-figaro.many@uha.fr
<https://orcid.org/0009-0002-3620-2563>

Alain Stockless, Professor
Université du Québec à Montréal, Canada
stockless.alain@uqam.ca
<https://orcid.org/0000-0002-7765-7866>

ABSTRACT

Recent studies show that the introduction of AI into teaching can generate psychological tensions or professional concerns, particularly when it is perceived as a threat to teachers' role or expertise, rather than a complementary resource. Drawing on activity theory and affect theory, this exploratory study aimed to understand the reconfiguration of teaching activities from the perspective of future teachers. A questionnaire was administered to 86 pre-service teachers, covering ten typical activities. The results reveal four activity configurations, independent of the participants' comfort with or attachment to these activities, but more related to the place of the activity in the profession.

Keywords: digital competence, artificial intelligence, activity automation, activity delegation, pre-service teacher training, teacher-activity relationship, affect



Introduction

For several decades, the teaching profession has been integrating educational technologies that aim to automate certain professional activities. These range from automated correction (exercise generators) to lesson planning and the generation of educational content using artificial intelligence (Selwyn, 2019). Current work on artificial intelligence (AI) in education presents it as a driver of innovation and competitiveness, able to handle certain aspects of grading work or providing feedback (Ferman *et al.*, 2021; Setiyowati & Ardaniah, 2025), generating questions (Koh *et al.*, 2025), or supporting the progress and personalization of learning pathways (Chaudhry & Kazim, 2022). AI is generally associated with promises of efficiency, streamlining, and professionalization of teaching (Koh & al., 2025).

These claims are based on the assumption that some of the activities that make up the teaching profession could be taken over by AI, and that the time thus freed up could be reinvested in activities with greater professional value. However, this approach rarely questions the subjective relationships that teachers have with these activities and the impacts that delegating them to AI could have on the meaning of their profession.

The teaching profession is not limited to a series of activities. It also constitutes a space for commitment, involving forms of self-investment, meaning, and perseverance in the profession (Guillemette, 2006). It is also a source of symbolic and material recognition (Palet, 2023) and contributes to the construction of professional identity (Gohier & al., 2002). Thus, entrusting certain activities to an AI not only transforms the way they are carried out, but also changes the relationship that teachers have with their profession.

Recent studies highlight the tensions teachers experience when certain activities are taken over by AI (Dehen *et al.*, 2026; Doyle *et al.*, 2025). On the one hand, delegating activities perceived as burdensome or time-consuming (preparing resources, designing activities, writing emails or activity instructions) is associated with relief and a lighter workload (Dangol *et al.*, 2025). On the other hand, teachers express concerns about what is displaced when the intellectual and relational dimensions of their profession are involved (Dangol *et al.*, 2025).

In other words, the same activities can be described simultaneously as a source of fatigue and overload and as important spaces for expressing creativity, relating to students, and affirming professional identity. This observation was also made by Lin *et al.* (2025), who showed that the preparation of teaching materials is experienced as both a tedious chore and a privileged space for expressing one's teaching style. Teachers say they are relieved to entrust certain administrative or repetitive activities to AI, while also expressing concern that the intellectual and relational core of their profession will be altered if AI is involved in instructional design or feedback.

These results emphasize that the distinction between activities considered tedious and those considered enjoyable does not strictly correspond to what can or cannot be entrusted to AI. Thus, delegating activities to AI involves some central aspects of the teaching profession – commitment, recognition, and professional identity – and elicits a variety of feelings (Dangol *et al.*, 2025; Lin *et al.*, 2025). These feelings can include relief, lightening of the load, pride, enthusiasm, and optimism, but also anxiety, a sense of threatened identity, unease, or guilt (Dangol *et al.*, 2025; Isma'il & Ibrahim, 2025; Tripathi *et al.*, 2025). Such emotions are indicators of the tensions at work in the reconfiguration of the teaching profession.

While AI is often presented as a lever for optimizing teaching work, this perspective is based on the implicit assumption that it is possible to delegate certain activities without affecting the meaning of the profession. However, teaching is a deeply invested profession, imbued with values and professional identity. This study therefore examines the links between the delegation or partial automation of teaching activities by AI, teachers' subjective relationship to their profession, and their feelings. The aim is to provide a better understanding of the critical issues involved in the automation of teaching activities by AI.



Theoretical framework

The theoretical framework applied here aims to critically analyze the automation of teaching activities, drawing on activity theory, artificial intelligence as a tool for reconfiguring activities, and emotions.

Activity theory and the teaching profession

The third generation of activity theory provides a sociocultural framework for analyzing human activity as a dynamic system structured around six interacting poles: subject, object, mediation tools, rules, community, and division of labor, oriented toward a result (Engeström, 2014). Applied to the teaching profession, this theory leads us to consider it as a set of collective, socioculturally situated activities, each of which is likely to evolve as mediation tools, rules, the community, the division of labor between community members, teachers, and their object change (McAvinia, 2016).

In this context, the teaching profession is oriented toward a central object, namely teaching and learning. Any change in mediation tools is therefore likely to transform the entire system of activity and, consequently, the conditions under which the profession is practiced. Several studies using activity theory emphasize that mediation tools are never neutral: they are socioculturally situated (Grimalt-Alvaro & Ametller, 2021; Miettinen, 2001) and convey norms, values, and rationales for action that can contribute to reconfiguring teaching work or generating tensions depending on the context of use. This analysis remains fully relevant to AI tools, whose introduction into the teaching profession calls for particular attention to the transformations they mediate. It therefore seems necessary to question how teachers perceive these reconfigurations of their professional activities when they are mediated by AI tools.

The teaching profession is characterized by a plurality of activities (versatility) that go far beyond the classroom and are categorized in various ways in the literature. Oh and Ahn (2024) distinguished between two main areas: educational activities, such as teaching, monitoring, and student relations, and administrative activities, including document management, report writing, and formal communication. Reynolds (1990) proposed a categorization into six professional functions: planning, teaching, classroom management, learning assessment, collaboration with the educational community, and professional development and responsibilities. Other studies favor a temporal approach: for example, An *et al.* (2017) identified routines for preparing for class, routines for teaching situations, and routines for follow-up after class. Finally, Van Dijk *et al.* (2020) highlighted six essential areas of activity: teaching and learning support, instructional design, assessment and feedback, instructional leadership, educational research, and professional development.

Despite the diversity of these categorizations, all of these studies share the idea that the teaching profession is based on a structured set of activities. Therefore, the mediation of the teaching profession by AI tools necessarily implies the total or partial takeover of some of these activities, with potential effects on the organization, meaning, and conditions of these activities.

Artificial intelligence and the reconfiguration of the teaching profession

Numerous studies analyze AI as a tool for mediating and mediatizing the teaching profession. This body of research highlights its potential to support certain teaching practices and to automate administrative or repetitive activities (Ferman *et al.*, 2021; Setiyowati & Ardaniah, 2025). However, AI is not seen only as an optimization tool: it is also described as a dynamic mediator capable of reconfiguring forms of communication, pedagogical interactions, and, more broadly, educational structures (Mishra, 2025).



Depending on how it is used, AI can be mobilized by teachers as an educational partner, a correction assistant, or even as a substitute teacher (Greene Nolan *et al.*, 2024). While these ways of using AI differ, they all involve a redistribution of teachers' involvement in certain activities that are part of the profession. This redistribution may lead to the emergence of new forms of dependence on technical devices and a redefinition of educational responsibilities, with the risk of reducing teachers' power to act (Tripathi *et al.*, 2025).

From this perspective, several studies emphasize that the mediation of teaching activities by AI can challenge teachers' professional autonomy, particularly when pedagogical, evaluative, or organizational choices are partially guided or constrained by automated systems (Bouakaz & Khalid, 2025; Tripathi *et al.*, 2025). Such reconfigurations of teaching activities are likely to have repercussions on teachers' professional commitment and relationship to the profession by changing the conditions under which they make decisions, apply their expertise, and take pedagogical responsibility.

Professional affects as critical analyzers

Affects are becoming increasingly important in the field of educational technology, although their integration into dominant theoretical models, such as Technological Pedagogical Content Knowledge (TPACK; Celik, 2023), is still in the process of stabilization. They are frequently used as determinants of technology use or as prisms for analyzing teaching work. Affects refer to a set of states and dispositions (moods, attitudes, preferences, affective dispositions, and interpersonal positions) (Scherer, 2005).

From this perspective, the integration of AI into education cannot be understood solely in terms of technical skills or adoption models. It also involves teachers' professional affect, which is an important explanatory variable for their adoption and appropriation of or resistance to educational technologies (Dilekçi *et al.*, 2025; Huang *et al.*, 2020; Wang *et al.*, 2025; Xie *et al.*, 2026). Several studies show that certain emotions, such as emotional attachment to professional routines, play a role in resistance to change. Others point out that states such as enthusiasm, frustration, or anxiety modulate the influence of beliefs and feelings of self-efficacy on digital use (Xie *et al.*, 2026).

Beyond their explanatory role, affects can also be considered as indicators of the processes of alignment or misalignment between the introduction of new technologies and teachers' conceptions of their profession, particularly in terms of autonomy, expert role, or ethical responsibility toward students (Liu & Geertshuis, 2016; Wang *et al.*, 2025). Affects such as pride, fear, enthusiasm, or feeling threatened thus reveal the tensions caused by changes in the teaching profession.

In this study, emotions are therefore treated as critical indicators of changes in the teaching profession, revealing structural tensions within the system of activity and often implicit professional issues. Positive emotions, such as enthusiasm, can indicate what is perceived as acceptable, while negative emotions, such as anxiety, can indicate areas of conflict (Liu & Geertshuis, 2016; Wang *et al.*, 2025; Xie *et al.*, 2026).

Thus, the link between activity theory, AI as a new tool for mediating the teaching profession, and professional emotions allows us to offer a critical interpretation of the automation of teaching activities through AI. It is on the basis of this link that the research questions are constructed, focusing on the partial automation of teaching activities by AI and the professional issues it raises.



Research questions

With a view to understanding how future teachers perceive the partial automation of teaching activities by AI, this research is structured around four research questions.

- How comfortable do future teachers feel with different aspects of the teaching profession?
- What is future teachers' perceived level of attachment to different activities within the teaching profession?
- What emotions do future teachers express when faced with the partial automation of these activities by AI?
- What are the configurations of activities depending on the relationships between comfort, attachment, and emotions in response to their partial automation by AI?

Methodology

Methodological approach and research stance

This study adopts a quantitative descriptive approach, not to predict the adoption of artificial intelligence or to measure its acceptability, but to describe and analyze the subjective relationships that future teachers have with different activities of the teaching profession, as well as the emotions associated with their partial automation by AI. In accordance with the theoretical framework used, the data collected are interpreted as indicators of situated professional judgments and tensions related to the reconfiguration of teaching activities. This methodological stance allows us to answer the first three research questions by describing the levels of comfort, attachment, and affects expressed, and the fourth question by analyzing the relationships between these dimensions.

Participants

The participants were 86 future elementary school teachers in their final year of pre-service training at a Canadian university. This population was chosen because these individuals are at an important stage in developing their relationship with the professional activities of the teaching profession and with digital technology in education. Their position allows for the analysis of representations that are not yet fully stabilized, which may reveal anticipated tensions regarding the use of AI in the teaching profession.

Data collection

Elicit (Ought, 2023) and Perplexity (Perplexity AI, 2024) were used to support the literature search process. These tools were used solely for technical assistance purposes and were not used to generate data. All content generated by these tools was critically reviewed and validated by the authors.

Data were collected using an online questionnaire, on a voluntary and anonymous basis, structured around ten activities that are representative of the teaching profession. The choice of an activity-based approach is based on the fact that not all activities in the teaching profession have the same symbolic, professional, or identity value (Browes & Altinyelken, 2022).



The questionnaire covered ten activities common to the teaching profession:

- Designing effective learning sequences
- Conducting varied teaching situations
- Developing and interpreting assessments
- Managing classroom dynamics
- Differentiating instruction in the classroom
- Establishing constructive communication with educational partners
- Engaging in continuous professional development
- Collaborating within a school team
- Organizing the learning environment
- Ensuring student well-being and overall monitoring

For each activity, participants rated their perceived level of comfort with the activity on a scale of 1 to 5. They also indicated their level of attachment to the activity, expressed in terms of the enjoyment they derived from performing it. The last dimension addressed by the questionnaire concerned participants' feelings about the partial automation of the activity by AI. Here, they were asked to imagine a scenario in which AI took over a large part of this activity.

The three dimensions – comfort, attachment, feelings about automation – selected for each of the ten activities of the teaching profession are derived from the theoretical framework and research questions.

Data analysis

The data analysis aimed to understand the perceived effects of delegating activities to artificial intelligence on participants' relationship to the teaching profession, rather than to measure the degree of acceptance or rejection of technologies. It sought to highlight tensions and contradictions due to potential transformations of the teaching profession due to the use of AI. Descriptive analyses were carried out to answer the first three research questions, which focus respectively on perceived comfort, attachment to activities, and emotions expressed in response to their automation by AI. These analyses were conducted by activity to respect the premise that the teaching profession is composed of heterogeneous activities, in which teachers invest themselves differently in functional, symbolic, and identity terms (Browes & Altinyelken, 2022).

Perceived comfort and attachment to the activity are categorized as low (mean score ranging from 1.00 to 2.49), moderate (mean score ranging from 2.50 to 3.49), and high (mean score ranging from 3.50 to 5.00). This type of categorization has been used in past educational science studies (Kwarteng & Sappor, 2021). The categorization of affects is based on the most frequently expressed valence (relative dominance). The differences between the dominant valence and the secondary valence were examined to distinguish clear cases of dominance from more balanced configurations.

The affects expressed in response to the automation of activities were analyzed as critical variables in relation to the teaching profession. This approach is in line with research that emphasizes that professional affective experiences are indicators of contradictions or tensions or forms of acceptance related to the



transformation of teaching activities by AI (Engeström, 2014; Huang *et al.*, 2020; Wang *et al.*, 2025). In a second step, relational analyses were conducted to answer the fourth research question, which concerns the associations between levels of comfort and attachment and the affects expressed in response to AI automation. These analyses aim to identify types of activity configurations rather than establish causal relationships between variables.

Results

This section presents the results of the data analysis in relation to the four research questions. The results are organized by question and aim to highlight the tensions associated with the partial automation of teaching activities by AI.

Perceived comfort with teaching activities

Perceived comfort was measured using a 5-point Likert scale, ranging from 1 (*I do not feel competent at all*) to 5 (*I feel completely competent*). To make the results easier to read, the mean scores were grouped into three levels – low, moderate, and high – as described in the methodology.

The results presented in Table 1 indicate an overall high level of perceived comfort with all teaching activities. The means are mostly above 4, reflecting a well-established sense of competence among participants. The highest levels of comfort relate to activities related to classroom management, professional collaboration, organization of the learning environment, and student well-being. This suggests a high level of confidence in carrying out these teaching activities, which are characterized by strong interactional and organizational dimensions. Conversely, slightly lower means are observed for the design of learning sequences and the development of assessments. This suggests that future teachers perceive themselves as mastering these activities less well than others. The moderate standard deviations indicate limited variability in participants' perceptions.

Table 1

Means and standard deviations of perceived comfort scores by activity (N=86)

Teaching activity	Mean	Standard deviation	Level of comfort
Designing effective learning sequences	3.83	0.83	High
Conducting varied teaching situations	4.21	0.65	High
Developing and interpreting assessments	3.63	0.87	High
Managing classroom dynamics	4.28	0.79	High
Differentiating instruction in the classroom	3.83	0.79	High
Establishing constructive communication with educational partners	4.08	0.87	High
Engaging in continuous professional development	4.14	0.81	High
Collaborating within a school team	4.33	0.82	High
Organizing the learning environment	4.31	0.69	High
Ensuring student well-being and overall monitoring	4.35	0.63	High



Perceived attachment to teaching activities

In this subsection, we present the results related to the second research question, which focuses on the attachment that future teachers say they feel when performing activities related to their profession. Attachment here refers to whether or not one enjoys an activity, regardless of how comfortable one is performing it. Perceived attachment was measured using a 5-point Likert scale, ranging from 1 (*I do not enjoy this activity at all*) to 5 (*I enjoy this activity very much*). The results are analyzed by activity in order to compare the level of enjoyment associated with each one. The mean scores were again grouped into low, moderate, and high levels, based on the criteria described above.

The results presented in Table 2 indicate that future teachers' perceived attachment to activities varies depending on the activity. However, these results highlight a widespread high attachment to all ten teaching activities considered in this study. The means observed, which are often close to the maximum on the scale, indicate strong emotional investment in these different activities. The highest levels of attachment relate to conducting varied teaching situations, collaborating within a school team, organizing the learning environment, and ensuring student well-being and overall monitoring. This underscores the importance attached to these activities, which are characterized by the relational and pedagogical dimensions of the teaching profession. The relatively low standard deviations for each activity reflect a consensus among participants as to the level of attachment to these activities.

Table 2

Means and standard deviations of perceived levels of attachment by activity (N=86)

Teaching activity	Mean	Standard deviation	Level of comfort
Designing effective learning sequences	3.70	0.92	High
Conducting varied teaching situations	4.64	0.57	High
Developing and interpreting assessments	3.59	0.95	High
Managing classroom dynamics	4.35	0.72	High
Differentiating instruction in the classroom	4.16	0.87	High
Establishing constructive communication with educational partners	4.15	0.83	High
Engaging in continuous professional development	4.21	0.80	High
Collaborating within a school team	4.55	0.59	High
Organizing the learning environment	4.50	0.66	High
Ensuring student well-being and overall monitoring	4.49	0.63	High

Although perceived attachment is high for all ten activities, some, such as designing effective learning sequences and developing and interpreting assessments, have a lower mean perceived attachment than others.



A comparison of the results in Tables 1 and 2 shows that perceived attachment is generally higher than perceived comfort for almost all teaching activities. This suggests that future teachers' commitment to these activities is based more on their identity or symbolic value than on their level of mastery. Activities characterized by a relational dimension thus appear to be central to the definition of the profession's identity.

Emotions expressed in response to the partial delegation of activities to artificial intelligence

This subsection presents the results relating to the third research question, concerning the emotions expressed by future teachers when faced with the partial delegation of teaching activities to AI.

These emotions were collected using a question inviting participants to express how they would feel if AI performed a large part of the activity. The responses were grouped into emotional categories to enable a comparative descriptive analysis. Based on work on teachers' emotions regarding technologies (Cheng *et al.*, 2022; Pi *et al.*, 2022), affects were grouped into three categories: positive (e.g., relief, satisfaction, feeling of help), ambivalent or neutral (e.g., hesitation, indifference, mixed feelings), and negative (e.g., discomfort, concern, feeling of dispossession or loss of meaning).

The categorization of activities is based on the valence most frequently expressed by participants (argument of the maximum (argmax)). When competing categories both reached high proportions, they were explicitly taken into account in the interpretation. This relative dominance approach makes it possible to account for the main trends while maintaining the visibility of minority positions, particularly curiosity and ambivalence.

The results indicate that future teachers' feelings about the partial automation of teaching activities by AI vary depending on the activity (Table 3).

Table 3 highlights the variability in affect valences across activities when it comes to partial AI involvement. The percentages correspond to the proportion of respondents who expressed each type of emotion for the activity in question.

**Table 3***Distribution of emotions expressed toward AI automation by activity*

Teaching activity	Positive emotions	Negative emotions	Explicit ambivalence	Curiosity (exploratory stance)	Characteristic emotions
Designing effective learning sequences	16	42	10	32	Skepticism
Conducting varied teaching situations	9	63	8	20	Skepticism, frustration
Developing and interpreting assessments	22	31	9	38	Relief
Managing classroom dynamics	7	69	9	15	Skepticism, Anxiety
Differentiating instruction in the classroom	27	28	10	35	Enthusiasm
Establishing constructive communication with educational partners	12	56	10	22	Skepticism, Distrust
Engaging in continuous professional development	41	21	10	28	Enthusiasm, Relief
Collaborating within a school team	11	58	10	21	Skepticism, frustration
Organizing the learning environment	38	25	10	27	Relief, Enthusiasm
Ensuring student well-being and overall monitoring	5	73	8	14	Distrust, Anxiety

Some activities are characterized by a high prevalence of negative emotions, such as skepticism, anxiety, distrust, or frustration. This is the case, for example, with ensuring student well-being and overall monitoring (73% negative emotions), managing classroom dynamics (69%), conducting varied teaching situations (63%), establishing constructive communication with educational partners (56%), and collaborating within a school team (58%).

Other activities are characterized by a predominance of positive emotions, such as enthusiasm and relief. This is particularly the case for engaging in continuous professional development (41%) and organizing the learning environment (38%).

There is also a group of activities for which curiosity plays an important role but coexists with both positive and negative emotions. This is particularly the case for developing and interpreting assessments (38% curiosity), differentiating instruction in the classroom (35%), and designing effective learning sequences (32%).

Explicit ambivalence, which reflects, among other things, the mixed feelings of participants, remains relatively stable and in the minority for all activities (between 8% and 10%).



Activity configurations in the face of partial automation by AI

In this subsection, we analyze the activity configurations that emerge according to comfort, attachment to the activity, and feelings about the partial automation of teaching activities by AI. We do not seek to establish causal relationships but rather to analyze the results by activity in order to identify configurations of these elements. Thus, the number of configurations selected is a direct result of the patterns observed in the responses to the first three research questions.

Since the levels of comfort and attachment to each activity are high on average, activity configurations depend more on the types of feelings identified (emotions and curiosity).

Table 4 presents the activities and the calculation of the difference between the primary valence and the secondary valence.

Table 4

Summary of dominant valences

Teaching activity	Dominant valence (argmax)	Dominant value (%)	Secondary valence (%)	Difference (Δ)	Analytical decision
Designing effective learning sequences	Negative	42	Curiosity (32)	10	Low emotional dominance; recognized exploratory posture
Conducting varied teaching situations	Negative	63	Curiosity (20)	43	Clear emotional dominance
Developing and interpreting assessments	Curiosity	38	Negative (31)	7	Low emotional dominance; dominant curiosity
Managing classroom dynamics	Negative	69	Curiosity (15)	54	Clear emotional dominance
Differentiating instruction in the classroom	Curiosity	35	Negative (28)	7	Exploratory attitude
Establishing constructive communication with educational partners	Negative	56	Curiosity (22)	34	Moderate emotional dominance
Engaging in continuous professional development	Positive	41	Curiosity (28)	13	Moderate emotional dominance
Collaborating within a school team	Negative	58	Curiosity (21)	37	Moderate emotional dominance
Organizing the learning environment	Positive	38	Curiosity (27)	11	Moderate emotional dominance
Ensuring student well-being and overall monitoring	Negative	73	Curiosity (14)	59	Clear emotional dominance



The differences (Δ) are interpreted qualitatively according to three indicative zones:

- $\Delta \geq 40$ points means that dominance is clear
- $10 < \Delta < 40$ points means that dominance is moderate
- $\Delta \leq 10$ points means that dominance is weak, requiring consideration of the secondary category.

The results of analysis of deviation values (Δ) highlight, for a first group of activities, a clear dominance of negative emotions regarding their automation by AI (see the cases in Table 4, where the deviation between the valence of negative emotions and the other categories is greater than or equal to 40 points). These are activities characterized by a relational and ethical dimension, such as managing classroom dynamics, conducting varied teaching situations, and ensuring student well-being and overall monitoring. The respondents ruled out the partial automation by AI of these activities.

A second group of activities is characterized by a moderate predominance of negative affects, with differences between these affects and curiosity ranging from 10 to 40 points. This is the case for activities involving establishing constructive communication with educational partners and collaborating within a school team. For these activities, the respondents saw partial AI support as limited and framed by an exploratory approach.

A third group of activities shows a gap between curiosity and negative affects of less than or equal to 10 points. These activities involve designing effective learning sequences, developing and interpreting assessments, and differentiating instruction in the classroom. For these activities, no clear affective valence is apparent for participants. Thus, these activities appear to be areas of intermediate positioning in terms of their partial coverage by AI. In these areas, future teachers' acceptance of AI is not simply a binary opposition between acceptance and rejection.

Finally, a fourth group of activities, consisting of engaging in continuous professional development and organizing the learning environment, is characterized by predominantly positive emotions, without however excluding a significant presence of an exploratory attitude (curiosity). Participants were relatively favorable to the partial but not exclusive handling of these activities by AI.

Table 5 presents the four activity configurations identified: protected activities perceived as unable to be taken over by AI, relational activities requiring close human control, educational activities subject to cautious exploration, and support activities more easily reconfigurable by AI.

**Table 5***Activity configurations*

Configuration (C)	Reconfiguration logic in the face of AI	Dominant affects	Role of curiosity	Activities
C1-Protected activities (cannot be automated)	Exclusion of AI from the core aspects of the profession	Dominant negative affects	Negligible	Conducting varied teaching situations; Managing classroom dynamics; Ensuring student well-being and overall monitoring.
C2-Activities with controlled use of AI	Limited, supervised use of AI	Negative affects	Secondary	Establishing constructive communication with educational partners; Collaborating within a school team.
C3-Activities under careful exploration without taking a position	Gradual, conditional experimentation with AI	Lack of stable affective valence	Central (exploratory stance)	Designing effective learning sequences; Developing and interpreting assessments; Differentiating instruction in the classroom.
C4-Activities with a tendency toward automation	Partial functional delegation to AI	Dominant positive emotions (enthusiasm, relief)	Secondary	Organizing the learning environment; Engaging in continuous professional development.

These reconfigurations do not reflect a lack of comfort with or attachment to the activity. Rather, the more an activity is perceived as relational or ethical, the more it is protected. Activities for which AI automation is cautiously explored but no position is taken are those that raise an exploratory stance in which curiosity is an important factor in accepting or rejecting this partial automation. Organizational and continuing education activities seem to be perceived as acceptable for partial automation by AI.

Discussion

Affects as critical analyzers of tensions related to automation

One of the major contributions of this study is that it treats emotions not as mere individual opinions, but as critical analyzers of changes in teaching activities. The positive, mixed, or negative emotions expressed in response to AI taking over some activities reveal structural tensions between AI's promises and the professional values and identity associated with teaching. From the perspective of activity theory (Engeström, 2014), these results can be interpreted as a sign that AI, as a mediation tool, is changing the conditions of access to the teaching activity as object. Depending on the activity, AI either supports the activity without transforming its object (e.g., engaging in continuous professional development activities) or comes into tension with it when it touches on central dimensions of professional judgment, the teacher-student or community relationship, or professional responsibility. This is the case, for example, with classroom management, student well-being, and student monitoring activities.



The results show that positive emotions tend to dominate when AI is associated with activities perceived as instrumental or organizational, which is consistent with studies highlighting the relief users feel when repetitive or administrative activities are automated (Dangol *et al.*, 2025). Conversely, when partial AI takeover affects activities involving significant intellectual, relational, or ethical engagement, feelings are mixed or negative. This does not depend on the participants' level of comfort with or attachment to these activities.

Automation of activities as a situated reconfiguration of the teaching profession

AI cannot be considered simply as a lever for optimizing or lightening the teacher's workload for time-consuming or repetitive activities (Selwyn, 2011, 2019). The results of this study suggest, on the contrary, that certain activities may be simultaneously perceived as time-consuming and be highly invested in subjectively. This is consistent with the findings of studies by Dangol *et al.* (2025) and Lin *et al.* (2025). In addition, the results of this research also highlight a conditional, situational acceptance of AI taking over certain teaching activities. Future teachers neither reject outright nor accept unreservedly the partial automation of teaching activities. They consider this partial takeover to depend on the activities with which AI is associated and the transformations it brings about in the teaching profession. This is less conditional on their comfort with performing these activities or their attachment to them than on the nature of the activities. These results are consistent with criticisms of individual-centered models of technology adoption, which tend not to explicitly consider the identity dimensions of teaching activities (Selwyn, 2019).

Thus, the boundary between activities that can be taken over and those that cannot does not coincide with the boundaries of difficulty in performing them or attachment to them. This means that even time-consuming tasks offer opportunities for pedagogical creativity (Lin *et al.*, 2025). By highlighting different configurations of activities, this research helps us understand that future teachers consider the partial takeover of activities by AI to be a heterogeneous and situational process that depends on the type of teaching activities involved.

Activities unsuitable for partial AI support: the core of the teaching profession

The configurations associated with dominant negative emotions mainly concern activities characterized by uncertainty, complexity, and the need for contextualized decision-making. Future teachers perceive these activities as particularly vulnerable to AI, not because of a lack of comfort or attachment, but because they involve aspects of work that are difficult to reduce to standardized procedures. This resistance on the part of future teachers is not technophobic, but may instead stem from an ethic of compassion that cannot be entrusted to artificial intelligence (Doyle *et al.*, 2025; Oh & Ahn, 2024).

This result echoes activity theory, which emphasizes that certain professional activities are inseparable from context, mediation tools, relationships with others, and the responsibility of the subject (Engeström, 2014). The partial takeover of these activities by AI is perceived as problematic because it shifts areas central to professional judgment and redefines the relationship between the subject (teacher), the tool (AI), and the object of the activity (teaching-learning). This echoes concerns expressed in the literature about the risks of deprofessionalization and loss of agency associated with AI (Tripathi *et al.*, 2025).

From this perspective, negative emotions can be interpreted as signs of professional resistance in the critical sense of the term: they express less the rejection of AI *per se* than the protection of the core of the teaching profession, understood as a relational, ethical, and situated activity.



In terms of training, these results suggest that training in AI in education cannot be limited to technical mastery of tools or AI literacy. It must also entail supporting future teachers in critically reflecting on teaching activities, their purposes, and the limits of their partial takeover by AI, so they can develop the ability to judge and negotiate the uses of AI according to professional situations.

Limitations of the study and perspectives

This study has certain limitations. It is based on self-reported data collected from future teachers. This reflects anticipated perceptions rather than actual scenarios of AI partially taking over teaching activities. The lack of measurement of participants' AI literacy also represents a limitation, insofar as it may have influenced certain expressed affects. The quantitative descriptive approach allows us to identify regular patterns, but it does not provide an in-depth account of the meanings future teachers attribute to the activities or the reasons for their feelings. Finally, the categorization of affects and the lack of consideration of institutional contexts suggest that the results should be interpreted as situational and exploratory.

The limitations of this study call for further research with in-service teachers, the use of qualitative approaches, the integration of training contexts into the analysis, and consideration of future teachers' AI literacy level.

Conclusion

The aim of this study was to better understand how future teachers perceive the partial takeover of various teaching activities by artificial intelligence. It links perceived comfort with activities, attachment to these activities, and the emotions expressed about their being partially taken over by AI.

The contribution of Engeström's (2014) activity theory highlights the fact that, for future teachers, AI, as a mediation tool, does not homogeneously transform the teaching profession. Its use is likely to generate varying degrees of tension depending on the teaching activities involved and the purpose of each one. The emotions expressed by future teachers provide insight into how they perceive the transformation of their profession. They clearly highlight the activities for which future teachers perceive AI as helpful and those for which they resist or adopt an exploratory stance toward AI use.

The results reveal four types of activity configurations: protected activities perceived as unable to be taken over, activities with controlled use of AI requiring close human supervision, activities under cautious exploration with no position taken on their automation by AI, and activities that are perceived as suitable for automation.

By adopting an analysis focused on teaching activities, this research has helped us move beyond the usual approaches that view technological acceptance in general terms. Such approaches are often criticized for their simplistic nature, which fails to take into account the fact that teachers' relationship to their profession can vary depending on the activities they perform and the tools they use (Selwyn, 2011, 2019).

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Résumé / Resumen / Resumo

Analyse critique des perspectives projetées des futurs enseignants sur l'automatisation du métier

RÉSUMÉ

De récentes études montrent que l'introduction de l'intelligence artificielle dans le métier des enseignants peut générer des tensions psychologiques ou des inquiétudes professionnelles, notamment lorsque l'IA est perçue comme une menace à leur rôle ou à leur expertise plutôt qu'une ressource complémentaire. En mobilisant la théorie de l'activité et les affects, cette étude exploratoire avait pour objectif de comprendre la reconfiguration des activités du métier enseignant à partir du point de vue de futurs enseignants. Quarante-deux enseignants en formation initiale ont répondu à un questionnaire portant sur dix activités typiques. Les résultats révèlent quatre configurations d'activités et indépendamment du niveau d'aisance ou d'attachement des participants à ces activités, mais plus à la nature et à la place de l'activité dans le métier enseignant.

Mots-clés : compétence numérique, intelligence artificielle, automatisation des activités, délégation des activités, formation initiale des enseignants, rapport enseignant-activité, affects

Análisis crítico de las perspectivas anticipatorias de los futuros docentes sobre la automatización de las actividades de enseñanza

RESUMEN

Estudios recientes muestran que la introducción de la inteligencia artificial en la enseñanza puede generar tensiones psicológicas o inquietudes profesionales, especialmente cuando la IA se percibe como una amenaza para su función o su experiencia, en lugar de como un recurso complementario. A partir de la teoría de la actividad y del afecto, este estudio exploratorio tenía como objetivo comprender la reconfiguración de las actividades de enseñanza desde el punto de vista de los futuros docentes. Se administró un cuestionario a 86 docentes en formación inicial, que abarca diez actividades típicas. Los resultados revelan cuatro configuraciones de actividades, independientes del nivel de comodidad o apego de los participantes a estas actividades, pero más relacionadas con la naturaleza y el lugar que ocupa la actividad en la profesión docente.

Palabras clave: competencia digital, inteligencia artificial, automatización de actividades, delegación de actividades, formación inicial de los docentes, relación docente-actividad, afecto



Análise crítica das perspectivas antecipadas dos futuros professores sobre a automatização das atividades de Ensino

RESUMO

Estudos recentes mostram que a introdução da inteligência artificial na profissão docente pode gerar tensões psicológicas ou preocupações profissionais, especialmente quando a IA é vista como uma ameaça ao seu papel ou à sua experiência, em vez de um recurso complementar. Mobilizando a teoria da atividade e dos afetos, este estudo exploratório teve como objetivo compreender a reconfiguração das atividades da profissão docente a partir do ponto de vista dos futuros professores. Um questionário foi aplicado a 86 professores em formação inicial sobre dez atividades típicas. Os resultados revelam quatro configurações de atividades, independentemente do nível de facilidade ou apego dos participantes a essas atividades, mas mais à natureza e ao lugar da atividade na profissão docente.

Palavras-chave: competência digital, inteligência artificial, automatização de atividades, delegação de atividades, formação inicial de professores, relação professor-atividade, afetos