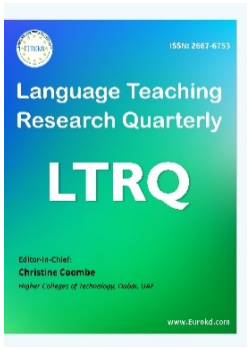

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Transforming L2 Teachers' Written Feedback through Professional Development: An Activity-System Analysis

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Abstract

L2 teachers' written feedback (WF) has been widely researched as one key cognitive factor in students' learning of a new language. Little research, however, has viewed WF as a contextually embodied and socially mediated activity that may be influenced by professional development. We compared five Iranian EFL teachers' WF before and after a professional development program in order to understand how the program may have contributed to reshaping their WF practice. We used activity theory (AT) to analyze marked writing assignments, semi-structured interviews, and teachers' narratives after the program. Analysis revealed that while some teachers featured a transformation in the object, tool, rule and division of labor of their WF activity, others displayed a change only in the object component. Professional development in WF helped EFL teachers reconceptualize their WF, making it more indirect and oriented to content. However, these changes also posed a variety of tensions for teachers. Reconceptualizing WF is a key component in teachers WF practice that should be considered along with other social and individual factors that mediate how teachers decide to provide WF to their learners.

Keywords: *Written Feedback, Corrective Feedback, Professional Development, Activity System, EFL Teachers*

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Introduction

Written feedback (WF) which is described as teacher's written comments on errors of form, content, and organization, is considered as one of "the most important pedagogical subtopic within the (sub)discipline of L2 writing" (Ferris, 2022, p. 344). As such, WF is assumed to be playing as an essential role in L2 development (Yu & Lee, 2024). As a hot topic in L2

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education inquiries, WF is treated as an "interface issue" (Mao et al., 2024) where research and pedagogy mutually inform each other (Brown et al., 2023; Mao et al., 2024). WF is believed to provide learners with chances of having a reader's reaction, justifies writing score (Hyland & Hyland, 2001), raises learners' motivation (Hyland & Hyland, 2006), and presents negative evidence or information about language development (Amrhein & Nassaji, 2010; Nassaji, 2015). Indeed, research shows that teachers WF practice is shaped through many factors. Review of extant research indicated that examination culture (Lee, 2008) and the overall policy of language learning (Lee, 2016; Naghdipour, 2016), school policies and foci of language (Li et al., 2025), teachers' overall beliefs about feedback (Soleimani & Rahimi, 2021) are examples of the features affecting how a teacher would give WF. Earlier studies, however, were criticized for criticized for presenting a fragmented picture of teachers' WF practice and lack of ecological validity (Bitchener & Storch, 2016; Soleimani & Rahimi, 2021; Storch, 2018). Current literature seems to fail to present a vivid picture and show hidden elements defining teachers' WF practice. Amongst background issues that might affect teachers' WF beliefs and practice is their knowledge about feedback in writing (Lee et al., 2015, 2018; Mao et al., 2024). Feedback knowledge refers to teachers' understanding of the principles, practices of feedback and the values and attitudes (dispositions) conducive to fruitful and meaningful feedback (Ferris, 2022). Teachers' knowledge about feedback or lack thereof is an influential factor shaping the quality of feedback practice (Lee, et al., 2023; Soleimani & Rahimi, 2021; Zhang, & Mao, 2023). Yet, WF knowledge related questions such how to give proper feedback, the timing of feedback, how to deliver it, how to improve its efficacy and engage learners still need further research (Li et al., 2025). Previous studies indicated teachers' little knowledge about the variety of feedback methods (Al-Bakri, 2016; Alshahrani & Storch, 2013; Lee, 2016; Lee et al., 2015; Soleimani & Rahimi, 2021). L2 teachers' insufficient knowledge about WF is attributed to lack of access to professional development training (Yu, 2025). To compensate for shallow knowledge about feedback, L2 teachers usually follow their pervious teachers' practices and they provide feedback in similar fashion (Karaca & Uysal, 2023; Lee et al., 2015; Soleimani & Rahimi, 2021).

Despite the importance of feedback knowledge for teachers' actual WF practices, little research has explored how professional development promoting such knowledge may contribute to reshape teachers WF (Vermunt et al., 2023). In particular, the contribution of L2 teachers' WF knowledge to the specific WF strategies teachers use appears to be an underexplored area (Hirvela, 2019; Lee & Yuan, 2021; Lee, et al., 2023; Soleimani & Rahimi, 2021; Yu, et al., 2022). To fill this gap, this study analyzes how a group of Iranian L2 teachers' may have changed their WF practice as a result of participation in professional development. As WF guides teaching practices (Ferris & Hedgcock, 2023) and its complex and context-dependent nature necessitates doing research in a classroom situation, naturalistic approach is recommend to capture the reason for particular WF practices (Crosthwaite et al., 2022; Lee, 2020). Results of earlier studies showed that teachers' WCF beliefs and practice can be best understood when they are considered as a situated issue which is under the control of emergent and adaptive beliefs and practices (Chen, 2022; Lee, 2021)

Observational and descriptive studies inspired by naturalistic research designs are attempts to uncover WF in a real world context and answer the questions as to why and how WF is provided in an authentic classroom and what elements affects teachers' practice (Mao & Lee,

2020). Storch (2018) suggested activity theory (AT hereafter) to deal with WF as a natural behavior and in an authentic context. With this in mind, we adopted AT as a robust framework for data analysis and conceptualize WF practice as a system of interrelated components (Yamagata-Lynch, 2010). AT is useful for describing whether and how changes in teachers' WF practice may emerge as teachers participate in professional development (Lee et al., 2021).

This study addresses the following research question:

RQ_1: What changes in teachers' WF practice may emerge as a group of Iranian teachers gain knowledge of WF during professional development?

Teaching of English Writing and WF in Iranian Education

English is taught at both public and private sectors in Iran but with different curricular arrangements. In the public sector, English is taught at middle and high school following a nation-wide policy of material development and assessment (Atai & Mazlum, 2013). In the private sector, on the other hand, materials and assessment are developed by expert natives to create authentic speaking and communication activities where learners are supposed to actively participate (Sadeghi & Richards, 2015). While in public sector and high schools the focus is on grammar translation method. The teaching of writing in Iranian public education is usually limited to grammar tasks and drills whereby learners learn about grammar rules. Very rarely does teaching focus on writing and therefore students have little opportunities for improving their ability to write extended text with a communicative purpose, either academic or otherwise (Khodabandeh, et al., 2014; Naghdipour, 2016). Similarly, ELT textbooks at schools rarely target student writing (Azizfar et al., 2010).

The little concern for student L2 writing of Iranian public education may have its roots in how Iranian L2 teachers are prepared. Iranian L2 teacher preparation programs are administered mainly by universities affiliated with the ministry of Education (Hedayati, et al., 2017). These programs seek to prepare pre-service teachers for teaching English in public schools (Mirhassani & Beh-Afarin, 2004) by improving their knowledge base (Akbari & Dadvand, 2014; Atai & Asadi, 2014; Hashemian & Azadi, 2010). They incorporate a variety of methods courses to help teachers develop teaching skills, curriculum, and management knowledge (Sahragard & Saberi, 2018). However, such courses barely incorporate a communicative approach that privileges meaning over form in writing. That is, little is done to prepare teachers on how to teach writing with a purpose and in context (Ganji et al., 2018; Mirhosseini & Khodakarami, 2015).

This scenario becomes worse in private centers where there is no unified teacher-preparation programs that are led by ministry of education or other authorities (Ganji, et al., 2018; Rezaee & Ghanbarpour, 2016). As a result, teacher preparation in these centers usually emphasizes the teaching of grammar and vocabulary with little attention to how to teach for communication (Mirhosseini & Khodakarami, 2015). In particular, ELT teacher-preparation programs that focus on WF practice are noticeably missing in private language learning centers (Naghdipour, 2016). This has resulted in ELT teachers' limited professional knowledge about how to deal with students written errors (Sadeghi & Richards, 2015). Rather, ELT teachers rely on intuition and imitation to deliver WF (See Soleimani & Rahimi, 2021). This study is thus ecologically significant as it seeks to understand how teacher preparation in WF may change teachers' WF practice, thus suggesting ways of how to revert this unsatisfactory state of affairs

in Iranian teacher preparation. Anchored in AT, we understand such practice as constituting an activity system.

Activity Theory

The concept of activity has a prominent role in sociocultural theory, presented as the site where human development occurs thanks to the mediation of signs, most notably language. Activities are driven by motives and become visible in people's goal-directed actions, which in turn are carried out through operations responding to contextual conditions. These activities correspond to overarching ways of human acting in the world that are socially historically, and culturally generated; work and schooling are examples of those activities (Lantolf & Poehner, 2008). Building on this theorizing, Engeström (1987) situates motivated, goal directed human actions within a network of contextual relations that both constitute and shape those actions, shaping in turn the activity they realize. Accordingly, AT views actions as a distinct and dynamic system, called an activity system that must be studied holistically with regard to how all those relations interplay (Sannino et al., 2009).

An activity system is made up of various components: subject acting, mediation tools, an object, a community, division of labor, and rules. We understand teachers' WF as part of an activity system where the subject corresponds to the teacher, whose point of view we take for analysis in this paper. The object is a special problem or material that is the focus of attention by the subject, in this case the object corresponds to students' learning of writing. The tools are semiotic or concrete material resources through which the object is pursued, such as the specific WF strategies the teacher uses to help students learn to write. The rules are the norms that regulate an activity including classroom rules referred to writing and assignments. The community is the group to which the subject belongs and who shares the same object. In the context of this study, the classroom community is made up of teachers and learners who are oriented to learn to write. Finally, the division of labor corresponds to the roles, responsibilities, and power relations that occur in a classroom and that ensure the realization of the activity of learning. These components interact in a dialectic relationship, any change in one component affects the rest of them.

Despite the potentials of AT to fully-fledged approach phenomena, its framework heuristics has informed few studies in L2 writing research (Storch, 2018). Yu and Lee (2014) studied learners' motives for taking part of peer feedback on L2 writing. As the motives shaping the learners' peer feedback activity were driven by their previous learning experience, beliefs, and school setting, the learners' understanding and performance of group feedback were unique and different. Mak and Lee (2014) investigated teachers' assessment for learning in writing (AfL) in L2 education helped learners become self-dependent. However, implementing AfL was challenging for teachers because it led into contradictions or clashes among the components of the activity system. Resolving those contradictions required negotiation in the school board to develop a shared vision for writing assessment. Soleimani and Rahimi (2021) used AT to study L2 teachers' WF beliefs and practices, showing that while L2 teachers had a negative feeling about WF, they provided it because it was one of the roles teachers were required to play. Teachers used their prior study experiences as a mediating model for providing feedback. However, a tension emerged between teachers' beliefs and the scope and type of the WF they provided. In a related study, Liu et al. (2022) used activity theory and

visualized teacher-student relationship in WCF activities as the alignments of goals, expectations (rules), and division of power-relations. Teacher-learners relationship was found to play a key role in the type and amount of feedback as teachers provided a larger amount of feedbacks to the students they favored.

Rahimi et al. (2024) used AT to explore the impact of automated written corrective feedback (AWCF) on EFL academic writing skills. Using interactive writing skills and qualitative and quantitative data, results indicated that both electronic and non-electronic classes improved the EFL learners' academic writing performance. AWCF was found to strengthen the connection amongst learners and foster shared learning experience. Learners seemed to be perform more effectively in terms of defining roles and responsibilities in electronic mode of leaning.

Few studies have analyzed the impact of teachers' emerging knowledge of feedback in the configuration of their feedback activity system. Herazo et al. (2019), for example, used AT to examine the difference between a teacher's dynamic assessment and corrective feedback to address students' oral errors. They used AT to show how the teacher, named Martin, changed his feedback practice as he learned dynamic assessment (DA) during professional development. Martin's oral feedback actions changed during professional development, particularly in how he conceived the role of feedback for student learning and in the specific feedback strategies he used. Also, Martin started to view himself as a mediator whose role was to help students perform better. In a related study, Sagre et al. (2021) analyzed the contradictions that emerged as three teachers, including Martin, attempted to implement DA. These contradictions included tensions in the components of the teachers' activity system (e.g., between subject and roles, tools and the division labor and tension in using graduated prompts and the emerging objects of DA). This research concluded that contradictions serve to spur teacher development, as teachers attempts to resolve them generated opportunities for analyzing and redefining their feedback praxis. Unlike previous studies, in this paper we focus on WF feedback rather than oral feedback. In a study by Reynolds and Teng (2020), the impact of involving native speakers in oral feedback was analyzed from activity theory point of view. Taking a naturalistic approach to examine oral corrective focused grammar feedback, they found that non-native speakers were stressed to give feedback as in Korean EFL context there was a passive attitude about correction and the exam-oriented culture limited speaking skill. While the learners' motive was to improve speaking proficiency, they were involved with different activity system when providing feedback.

Writing teacher education program were found to enhance teachers' beliefs and prepare them for improved writing pedagogy (Teng, 2016; Worden, 2019), and develop teachers' agency (Christiansen et al., 2018). However, incorporating conceptual knowledge and theories into real classroom and expecting log-lasting outcome might pose challenges to the teachers as shifting understanding and beliefs and localizing the newly learned practice is not an easy task (Yu, 2025).

Our study is part of a larger investigation exploring EFL teachers' WF practice (Soleimani & Rahimi, 2021). Findings from the first phase of the larger project indicated that teachers' little knowledge about WF and their old-seated beliefs regarding feedback led them to practice direct forms of WF. This research examined whether and how five Iranian L2 teachers reshaped their WF practice as they participated in professional development.

Method

Context and Participants

This multiple case study (Yin, 2014) took place at a private language center in Shiraz, Iran. The center follows communicative language teaching to improve learners' listening and speaking rather than writing. Writing tasks, if any, were just a means for practicing grammar and correct use of the L2 and teachers' WF focused mostly on local grammar errors. Through purposive sampling method, five teachers were selected. Two male (Hossein and Javad) and three female (Mary, Mahsa, and Roya) that were chosen because 1) of their teaching experience (at least five years), 2) their university major (having a degree in TEFL, English translation, or English literature), 3) for having no experience of professional development on writing instruction or WF, and 4) because they taught the B1 level, where learners were supposed to write extended discourse. At the time of the study, all of them had completed graduate degrees except for Mahsa. Data for this phase of the study were collected over a nearly 5-month period, during the spring and summer semesters in 2018. The following table shows details about the teachers.

Table 1

Teachers' Background Information

Teacher*	Degree	Level of course	Experience	Age
Hossein	MA	Summit 1(a)	12 year	32
Javad	PhD student	Summit 1(b)	14 years	36
Mary	PhD	2A	15 years	38
Mahsa	BA	2B	14 years	36
Roya	MA	3B	16 years	39

Professional Development Program

The five teachers participated in a 10-hour professional development (PD) program, led by the first author, during five sessions over two weeks. The program sought to familiarize teachers approaches to writing instruction (Ferris & Hedgcock, 2005), and WF practice (type, scope and focus of the feedback) (Ellis, 2009; Ferris & Roberts, 2001). The overall program outline followed Lee et al.'s (2015) whereby teachers were invited to interview sessions and then took part in workshops. Teachers asked questions, did hands-on activities, and exchanged ideas based on the contents of each session. At the beginning of the program, teachers were asked to provide WF to a sample text and then discussed and problematized their WF practices. Then, the program focused on criticizing product-oriented writing instruction and single draft evaluation. The main part of the PD program presented and discussed feedback issues including types, scope and focus of feedback. After the presentation of these issues, teachers and teacher educator reviewed teachers' WF practice on previous tasks, they also discussed participants' questions and comments on WF issues. Before finishing the program, the five teachers provided feedback on a new writing sample from an intermediate level student. The teachers' feedback on this sample and their ideas on feedback performance were discussed afterwards.

Data Collection

Writing samples, semi-structured interviews and narratives at the end of PD were used to answer the research question. To check teachers' WF practice before the program, the teachers

were asked to hand over a copy of their students' writing, which were used for one-on-one interview sessions with the first author to elaborate on their practices and attitudes towards WF. Then, teachers provided a copy of their learners' writing tasks; each teacher provided 10 writing samples with their WF before PD (total 50 samples). After being exposed to some randomly selected writing excerpts, the teachers were required to explicate their justifications for the specific feedback that they had already provided.

After the PD program, the teachers gave their students three writing assignments and provided written feedback. 100 writing samples (20 per teacher) were collected for interviews conducted for each teacher one week after they had provided WF. During these interviews, teachers explained their feedback decisions in terms of type, focus, and scope. One week after the end of the semester, teachers wrote a personal narrative to describe the experience they gained from the program, and whether and how they had changed their WF practice. They also compared their WF beliefs and practices to the ones before the PD program. The following table illustrates data collection procedures.

Table 2

Timing of Data Collection

Time	Data Collection Activity
The First and second week of the study	Collecting baseline writing samples
The third week	Interviews
the 4th and 5th week	PDP sessions
The 6th to the 16th week	Collecting post PDP data (samples of writing & qualitative data)

Data Analysis

To analyze the writing tasks, we measured the frequency and percentage of errors and feedback types using a coding scheme. The scheme included a mixture of the definition of WF proposed by Ferris and Roberts (2001), Ellis (2009). For the qualitative data, we used an activity systems analysis (Yamagata-Lynch, 2010) to focus on teachers' WF activity. We followed several stages of data transcription, initial coding, analytic coding, and finalizing codes to gain a final interpretation. We focused on the activity system of teachers' WF as unit of analysis, paying close attention to the dialectical connection between the subject (the teachers), the object (feedback on writing samples), the tools and mediating artifacts (types and scope of feedback), the community (EFL teachers and learners), and rules (the bases of providing feedback). The researchers coded de the interviews using the components of an activity system as framework, identifying content from the interviews that could potentially be matched with those components, shown in the Table 3.

We triangulated data from different sources to ensure the credibility and internal validity of our analysis. We also checked the data with an expert and cross checked the transcription of the interview with the participants. The participants revised the excerpts of the interviews and commented on the accuracy of the content to minimize personal bias. In addition, we compared the transcribed data with the audio-recorded data and involved a second coder, an English teacher holding an MA in TESOL, to review writings and the WF analyses.

Table 3

The Activity System of Teachers' WF Practices

Components in a Human Activity System	Components in the WF Activity System in this Study
Subject	English teachers and their histories, beliefs, theories, and feelings
Mediating Tools	Tools such as WF types, focus of WF, types of commentaries, scope of WF
Object and outcome	The activity of feedback provision on writing samples, and the goal of feedback on writing.
Community	EFL Teachers and learners
Rules	The bases for giving feedback on writing, teachers' teaching mandates and norms issued by local and national educational authorities, values and culture of the language learning center
Division of Labor	The relationship between teachers and learners, the roles assigned to the learners when giving feedback

Results

In this section, we describe the changes that emerged in the activity system of teachers' WF after professional development. Whereas these changes were salient in the tools of feedback and in the rules of classroom work for three of the teachers, other changes were subtler yet significant since they occurred in the object leading their WF activity. For the other two teachers these changes were less visible or simply do not occur.

Transformation in the Tools of WF: From Direct to Indirect Forms of Feedback

One readily visible change in teachers' WF practice was their use of new, more indirect forms of feedback. These new forms served as mediation tools to encourage students to understand and correct their own written errors. As Table 4 shows, direct feedback seemed to be the default choice before professional development, realized mainly through crossing a students' error and providing the correct form on top of it.

Table 4

Direct vs. Indirect Feedback Before and After Professional Development (PD)

	Direct		Indirect	
	Before PD	After PD	Before PD	After PD
Hossein	78.35%	20.66%	21.65%	65.34%
Javad	80.6%	15.14%	16.8%	80.28%
Roya	75.5%	29.05%	22.22%	65.25%

After the PD program, however, Hossein, Javad, and Roya moved away from these forms of feedback and preferred indirect feedback instead using two new WF strategies. One of them was a coding list that they used to mark students' writing. This coding list consisted on symbols of feedback, their meanings and how to use them in practice. They explained in the interviews that they adopted this approach with the purpose that learners amended their writing errors themselves after receiving their marked papers, and then submit the revised forms in the following session. After distributing the coding sheets among the learners, the teachers defined and described the codes in detail and answered learners' questions.

Another tool in their emerging WF practice was the use of commentaries on the content and organization of students' writing. In her stimulated recall interview, Roya alluded to this

change, highlighting its use to focus on content: "*Before PD program, I did not pay attention to errors of content. Now I try to use short comments to address content errors too."* Javad also explained that he became more careful about paragraph development after PD: *Now I pay attention to organization of writing as well and use comments to point out their problems in paragraph development.* Hossein disclosed some of the reasons behind these changes in their WF activity system. Like Javad and Roya, he developed the belief that using codes and indirect feedback stimulated learners' critical thinking and knowledge building through self-discovery. During the interview after PD, Hossein explained:

> *Codes trigger curiosity and force learners to go and search for further issues in writing. For example, when I use tense or verb error as a code, the learner is supposed to read the sentence more carefully and besides learning about correct equivalent of the circled error, he/she might learn and review other areas of grammar as well.*

Hossein pointed to the lines in which errors were tracked and he left comments at the end of the text, indirectly alluding to the category of errors. His justification follows:

> *Giving feedback in the paper might be distracting for learners and using numbers to point to the error in the text forces the learners to review the paper once again. I think this reviewing gives the learners a chance to focus more deeply to catch their faults.*

Not unlike Hossein, Roya considered indirect feedback (underlining, circling and using codes) as a factor to improve learners' autonomy and self-discovery experience. What these findings seem to show is that teachers' repertoire of WF strategies became richer after PD. Indeed, rather than replacing direct strategies for indirect ones, both Roya and Hossein continued to use direct (giving the correct forms of the errors) and indirect (coding, underlining, using emoji) types of WF after professional development, although for different reasons. During the interview after professional development, Roya explained this mix in WF practice:

> *Sometimes the whole sentence needs revision as codes cannot help students much, so I try to focus and reformulate that part of writing. This way, the learners can see how ideas can be stated in a well-structured and coherent manner.*

Hossein described indirect types of feedback as a timesaving experience that can ease the burden for teachers and make the job more manageable:

> *I think if I give codes, I can check all of learners' writings. Direct feedback is a way more time-consuming for the teachers.*

Mary and Mahsa, the other two participant teachers, showed a less remarkable transformation in the tools of their WF practice. To be true, they continued providing mainly direct types of feedback after professional development. Although they both regarded the positive impact of professional development on their beliefs about the efficacy of indirect feedback, they asserted that in the Iranian context learners expect teachers to play an active

role in teaching and that demanding students to correct their own writing following indirect WF would be not only time consuming but also problematic. Mary said in the interview after professional development:

> *If I practice indirect feedback, it means the leaners should also take the responsibility and they must be active. It takes time to define such a role and most of leaners might have problems with this.*

Mahsa expressed a similar view:

> *During my teaching time, I have learned that in Iranian context, teachers do the main job. Giving indirect feedback would be effective providing that leaners also accept that being active and discovery learning is more effective. Making such a change is time-consuming; I could not do a miracle in one term.*

These comments suggest, on the one hand, that teachers' decisions to adopt new forms of WF interact and may even clash with teachers' current activity systems. Indeed, Mahsa's and Mary's comments suggest an emerging tension between teachers' WF tools and traditional arrangements in division of labor in the Iranian EFL educational context. Unfortunately, we could not address this tension during the professional development program because it emerged after the program was over.

Transformation in the Object of WF: Testing Language Abilities and Teaching Writing

While the teachers' indirect forms of feedback were a readily visible change in their WF activity system, a less visible yet fundamental change occurred in the role they ascribed to these forms for promoting student L2 learning. That is a change also occurred in the object of their WF activity system. Hossein, Roya, and Javad, for example, developed a new orientation in which WF became a means towards improving students' autonomy and self-discovery. Roya commented:

> *After participation in training, I circle errors and /or underline erroneous structures in writing. This manner is good to develop learners' thinking skills and fosters their curiosity.*

Javad provided a similar explanation, also in the narrative:

> *One day one of my students came to me and appreciated this new approach as she felt like indirect feedback is more interesting and challenging for her. She commented that direct feedback is boring and indirect feedback is more thought provoking.*

These three teachers also felt that more indirect forms of feedback helped develop students' writing abilities, communication skills, and overall proficiency, not only accuracy. Before PD, they used WF to test language competence, defining good writing as following grammar rules and sticking to accuracy. Therefore, they addressed local errors of writing, leaving out errors

related to function and meaning: They addressed 80.06% of wrong word errors, 71.42% of sentence structure ones, and 94.31% of errors that occurred in the article category. With this in mind, all form errors were addressed. Table 5 shows combined percentages for the target of WF in Hossein's, Roya's and Javad's WF practice.

Table 5

Comparing Errors Tapped by Hossein's, Roya's, and Javad Before and After the PDP

Error type	Before the -PDP	After the PDP
Punctuation	97.75%	99.32%
Noun ending	95.16%	99.39%
Article	94.31%	96.04%
Wrong word	80.06%	100
Sentence structure	71.42%	99%
Verb	96.84%	100%
Ideas	0%	42.34%
Organization	0%	78.45%
Total	75.35%	92.24%

As Table 5 shows, content and organization errors did not receive any attention by these teachers before the (0%), but became the focus of teachers' WF after it (42.34% and 78.45%, respectively). This suggests an emerging change in the focus of WF, from solely a focus on form to a focus on form and content. Hossein narrated this change in the interview:

> *In previous terms, I was oblivious of giving feedback on content. My learners only copied the right answer, did not think about developing ideas in a native like manner, and did not find the chance to see the importance of using native like expressions in a well-organized paragraph.*

The PD made Hossein sensitive about how focusing on content can help learners find wrong collocations in writing, deviant, and non-native expressions, helping them write better. Forming a new understanding of writing instruction and a new conceptualization of a good writing was a step forward for him. Roya shared a similar feeling in the same interview:

> *Before taking part in the training programs, I was not conscious about the significance of how feedback on sentence structure and wrong word errors not only can improve writing skill, it also helps them learn native structure and develop their general English as well. Therefore, now I try to consider developing proficiency when I give feedback.*

PD may thus have reshaped these three teachers' orientation to the object of giving feedback, stimulated their attention on local errors as well as errors of content and ideas in writing because learning through these errors may spur writing ability and also language proficiency in general. However, Mary and Mahsa did not show such a change after PD, as they did not focus on errors of content and organization at all. Mahsa and Mary believed that dealing with writing was not their main focus in classroom and that focusing on content and organization thus needed a separate course. Mahsa's stated:

> *Giving priority to the errors of content and organization does not fall in the scope of this class as our primary purpose is teaching language rather than writing skill. In this class writing is not the only focus of teaching and we have to devote time on other skills as well. Giving feedback on development of writing and rewriting the content, falls in the scope of writing course.*

Mary also explained this point in the interview:

> *If I were teaching a writing course, then I might have also focused on content and organization problems as well. However, in this class, I normally use writing as a means to teach language.*

Unlike Mahsa and Mary, the emerging changes in tools and object that occurred for in Hossein, Roya and Javad also implied subtle changes in classroom rules and division of labor related to their WF.

Transformation in the Rules: Moving from a Product to a Process Approach in Feedback Practice

The reconceptualization of feedback as a means for developing learner autonomy and L2 writing engendered a change in the rules of teachers' WF system. This implied moving away from a product approach to writing, where students were required to write only one draft, to a process approach whereby they had to revise various drafts following the teachers' WF. Hossein explained in the interview:

> *When I use indirect feedback, I need to see whether the learners have understood the meaning of the feedback and if they were successful in finding out the problem of writing. So, I have to ask them to submit the revision of writing so that I follow the quality of my own feedback practice.*

Javad also highlighted the importance of a revised draft for him and his students to check progress:

> *Following a process approach to WF, provides a chance for me to see the efficacy of my feedback and for the learners to track their progress in writing and experience a sense of achievement.*

Roya similarly pointed to the positive impact of following a process approach to WF on her teaching and the learners' learning ability:

> *In rewriting there is a chance of considering the meaning of words and monitoring the levels of development in writing and general proficiency as well.*

The classroom rule of having to submit a new draft was thus one of the ways in which Hossein, Javad, and Roya accommodated their WF activity to make it cohere with their emerging object of targeting both accuracy and the content of writing. As was to be expected given the little change in the object of their WF practice, Mary and Mahsa experienced little to no change in the rules conditioning their WF practice. Indeed, after professional development they were still following a single-draft approach to WF.

Transformation in Division of Labor: Moving from Passive to Active Learners

Transformation in the tools, rules, and the object of WF may have led also to change in division of labor for Hossein, Roya and Javad. After PD, these three teachers started to assign active roles to their learners through WF, so that they improved their own writing. As noted above, before PD these teachers believed that direct feedback reflected teachers' sense of responsibility and indicated their hard work. After learning about indirect feedback, these teachers seemed to reconsider their attitude towards the meaning of responsibility and, by assigning coded feedback, they attempted to give latitude to learners and help them be autonomous in learning. A shift in the meaning of the responsibility is evident in the following excerpts from Hossein's interview:

> *I thought giving direct feedback would reflect me as a responsible teacher, now I think a responsible teacher should guide learners with the best ways of learning rather than transmitting the knowledge. In other words, a good teacher must teach learners how to fish rather than fishing for them.*

As Hossein's comments make clear, providing coded feedback in writing was assumed to pave the way for self-dependent and autonomous learning and redefining the teachers' role, from a source of knowledge to a mediator and who assigned active roles to the learners in the classroom. Roya explained this issue in the stimulated recall:

> *Before the PDP, by giving direct feedback, I never felt as if I challenge learners and activate their sense of responsibility. After learning how to give indirect feedback, I learned how to share tasks.*

Discussion

Our activity system analysis identified similarities and differences in teachers' WF before and after the PD program. Most salient changes occurred in the object, tools, rules and division of labor for Hossein, Javad and Roya. A renewed attitude to WF as a means to develop students' autonomy and language proficiency was coupled with a change in tools, rules, and division of labor. Not unlike related studies (Herazo et al., 2019; Lee et al., 2015; Sagre et al., 2021), the most visible change occurred in the tools of WF: Whereas before PDP teachers gave direct types of feedback on form errors, after it they started to also give indirect feedback and focus on content and organization errors. In terms of division of labor, the teachers started to move from giving feedback on final drafts to asking their students to focus on WF and revise writing tasks.

More subtly, viewing indirect feedback as an opportunity to enhance learners' autonomy and critical thinking suggested a shift in the object of WF. That is, PD in WF seems to have reshaped teachers' orientation toward of the role and purpose of WF in writing. In our view, the PD program seems to have engendered a new theoretical perspective about the nature and purpose of WF for these three teachers, similar to changes reported by Sagre et al. (2021) for teachers' oral feedback following PD. One important lesson to be learned from this finding is that these kinds of subtle changes that occur in the activity system beyond the subject (i.e., the teacher) are fundamental for understanding why teachers may adopt certain WF practices and not others. Unfortunately, most research has emphasized WF from a cognitive perspective, focusing on the WF tools teachers use and their impact on student learning (e.g. Ferris, 2014; Lee et al., 2015; Rahimi, 2019) and thus overlooking these important issues. More studies are needed that widen the scope of research in WF to include the various contextual factors we have identified as well as others.

Another lesson we draw from the results of this study is that teacher learning of WF during PD is not a straightforward process of simply adopting a set of new instructional practices. Indeed, while some teachers changed their practices in particular ways, for others the change was slightly different or did not even occur. The divergence underscores the reality that operationalizing even well-designed PD programs might expose teachers to unexpected challenges due to clash with the long-established roles and routines. Likewise, Yu (2025) pointed to local issues that might contradict with practicing PD lessons. To minimize the tensions, it is important to develop PD initiatives to consider the contextual problems that might impede change.

What is more, in some cases the appropriation of WF even collided with strongly held beliefs about teaching and learning. Similar to other studies (Sagre et al., 2021), activity theory proved useful for understanding the nuances and subtleties of such changes. This is especially true for understanding the kinds of contradictions and dilemmas teachers may face when adopting new forms of WF (Yamagata-Lynch & Haudenschild, 2009), such as those for Mary and Masha, which may be resolved by rejecting the practices proposed in PD. Future PD in WF should be aware that such contradictions are a common feature of teachers' engagement with PD (Yang & Yang, 2019), hence they should design opportunities for helping teachers negotiate and resolve these contradictions during PD).

Teachers' reconceptualization of feedback was hand in hand with transformation in routines of classroom and led into moving from a product-oriented approach to process oriented and iterative approach that allowed teachers monitoring progress and evaluate the effectiveness of the feedback. By assigning revision, teachers created a chance for students to view learning as a continuous process. Yet, the differences of transformation in the participants' WF activity system also verified that such transformation is not predictable and multiple institutional and personal factors simultaneously shape and reshape it (Engeström & Sannino, 2021; Sagre et al., 2021). Separating the factors leading into the change is difficult if not impossible as these factors inevitably interact (Storch, 2018).

On the whole, this study emphasized that new practices of WF should be deployed by the teachers in accordance with contextual needs and background variables. To offer the most appealing practice, the teachers need to develop an intimate familiarity with the context and utilize the most appropriate techniques that fit the purposes and realities of a particular class

(Mao et al., 2024). Similarly, earlier research has emphasized on the necessity of studying the impact of context along with PD when analyzing teachers' change (Herazo et al., 2019; Johnson & Golombek, 2011; Lee, 2016). In an extended definition by Macbeath (2012) context is "schools of thought", the traditions and norms of practice, the life experiences in which knowledge of different kinds is generated' (p.66). Looking from this viewpoint, the differences in the level of teachers' willingness to implement PD lessons in real classroom context may be linked to their beliefs and perception. Another possible theory to elaborate on change in teachers' practice is complexity theory which seems to offer a more comprehensive explanation of the interactions amongst institutional and complexities and provide reason for change in teachers' beliefs and practices (Chen, 2022). Therefore, future studies are recommend to adopt this theory to unmask the dynamics of transformation and the impact of training and learning on teachers' practice.

Resolving contradictions calls for negotiation in school board to develop a shared vision and new objectives for teachers' practice. Vermunt et al. (2023), pointed to this issue in their study that teachers' working environment and ecology of classroom affect the productivity of the PD. With this in mind, studying the impact of PD on teachers' practice requires a comprehensive focus on the particular context of practice and recognizing school related issues shaping teachers' activity system. To maximize the productivity of PD programs, future training plans might be benefiting from focusing on revisiting feedback practices in accordance with the contextual needs and expectations. Providing an unwavering support though progressive mentoring and peer collaboration can also reduce the distance between innovative practice and traditional norms of a classroom.

Conclusion

Examining the impact of professional development (PD) program on Iranian EFL teachers' written feedback (WF) practices was the focus of this research. Using an activity theory analysis, we found that while PD program was successful in reconceptualization of the teachers' WF, practicing the PD lessons pose challenges. Three of five participants acknowledged significant changes in their WF activity system including adopting indirect feedback, shifting toward process-oriented approach and redefining their roles in relation to the learners. The pattern of the change was however different for two teachers reflecting complicated interplay between personal beliefs and practical contexts.

This study also highlighted the drawback of viewing teacher development solely as a cognitive transformation. As a more holistic viewpoint, AT presents a full-fledged view of how teachers' knowledge is affected by contextual factors to shape their real practice. This paper provided an example of the need for having an all covering PD program whereby emerging contradictions are addressed as teachers try to realize new practices. Recognizing the significance of incorporating cultural and institutional contexts with the knowledge to be obtained from a PD program and the potential challenges help forming a richer understanding of the change in teachers' practice and designing a more optimal PD program.

Findings of this study should be interpreted in light of several limitations. Using AT only at the level of data analysis and not at the level of designing research framework limited the depth of insight informed by AT. Some aspects of the activity system including the learners' perception of the feedback and the impact of the broader contexts were left untapped. The study

was conducted over a fairly short period (six months) limiting the reality of the changes that might emerge as a result of the effectiveness of PD program for teachers' practice and internalization of new approaches. Future studies are recommended to incorporate AT into research design from the early stages of the study and consider a larger scope to encircle extra elements and conduct longitudinal research to present a more realistic picture of changes in teachers' practice.

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