Editing video cases to facilitate preservice teachers' self-reflection on their instructional decisions

Raziye Sancar & Deniz Deryakulu

Routledge
Taylor & Francis Group

Check for updates

Editing video cases to facilitate preservice teachers' self-reflection on their instructional decisions

Raziye Sancar [ID][a] and Deniz Deryakulu [ID][b]

aDepartment of Computer and Instructional Technology Education, Kirsehir Ahi Evran University, Kirsehir, Turkey; bDepartment of Computer and Instructional Technology Education, Ankara University, Ankara Turkey

ABSTRACT

This study examines preservice teachers' (PTs') video case (VC) editing process to enhance their self-reflection on instructional decisions in teaching experiences. We apply the triple-cycle process, including teaching experiences, video editing, and peer discussion. Each PT edited three teaching experiences and discussed a total of forty-eight VCs. While editing VCs, PTs tended to notice, describe, identify the reason, judge, express emotions, analyse, and generalize with any other situations. The results indicated that while editing their teaching experiences, PTs improved self-reflection on their instructional decisions, which increased from defining to analysing and generalizing the instructional decisions. Editing video-cases improve PT's self-reflection on their instructional decisions. Viewing and discussing peers' experiences enrich PT's teaching repertoire. PT tend to focus on how to teach including classroom management and teaching methods. Editing and discussing video-cases enhance PT's noticing skills from both the teacher's and the student's perspectives. Thereby, editing video-cases and viewing and discussing peers' experiences improved PT's self-reflection and the ability to notice through the eyes of both the student and the teacher. And it also enriched PT's teaching repertoire.

1. Introduction

Since teaching is naturally context-specific and complex, preservice teachers (PTs) need to be equipped with skills to cope with this complexity. PTs often experience disconnections between the school environment and the realities of teaching and learning after the teacher education process (Nielsen, 2015) which basically stem from teacher education processes that ignore the situational and context-specific nature of education (Kennedy, 2019). This causes PTs to create two different perspectives about theoretical knowledge and actual teaching practices (Nielsen, 2015). In this regard, the methods, strategies, and tools used in the teacher education process should support PTs in making meaningful connections between their theoretical knowledge and practical experiences (Tilson et al., 2017). Hoynes, Klemp, and Nilssen (2019) report that video

cases (VCs) are an effective tool to combine PT's theoretical knowledge with teaching practice by applying VCs in the instruction which include the complexity of real classroom activities.

Unlike the traditional teacher education process, VCs help PTs reflectively experience and plan, analyse, and decide how to behave in a complex situation (Dorfner et al., 2018). VCs improve PT awareness of different classroom situations, examples, and practices (Yung et al., 2007). Moreover, while PTs' achievements are generally evaluated by others (usually by the lecturer) in traditional teaching processes, implementing VCs in instruction provides an opportunity to equip PTs with meaningful self-assessment skills and to develop professionally.

Although researchers have reported effects on PTs learning from VCs, such as their own, peers', or stock videos, studies using PT experiences as VCs generally involve directly watching and reflecting on the experience and do not include any editing process. In the limited literature, VC editing allows PTs to carefully monitor their teaching experiences, to gain a detailed and holistic view of the situation, and to improve their learning by doing and self-reflection skills (Yeh, 2018). Also, it provides opportunities to enable PTs to confront themselves in the classroom. This confrontation acts as a tool to disassemble and reconstruct their bodily techniques and habits through continuous trials and VC self-assessment teaching experiences (Xiao & Tobin, 2018). VC editing supports PTs' motivation towards the teaching process (Cid-Cid et al., 2018). Considering that the editing process is barely employed as a design variable in research, it will contribute to the literature with its research originality. Additionally, as we consider the value of diversifying PT experience, we underline that applying VC discussions provides PT with much more practical experience than traditional teaching processes. In this study, we explore how PTs edit their teaching experiences using instructional decision-making perspectives and discuss them with their peers. In this regard, we address two research questions below.

(1) What are PTs contents of instructional decisions on edited VCs?
(2) What are PTs self-reflection types of instructional decisions on edited VCs?

2. Video cases for self-reflection on instructional decisions

A VC is a previously experienced narrative that represents an 'entire set of events' regarding the process and outcome of the situation (Rong & Choi, 2019). Since VCs include different design variables, different components, types, and goals, each unique VC instruction has its unique results, solutions, questions, and problems to be considered, and all design processes provide contributions to both literature and practice.

Regardless of the method of the instruction process employing VCs, the common assumption is that there should be an evaluation and reflection process in parallel with the monitoring of VCs. Because just watching VCs would not be meaningful without any evaluation process. For this reason, studies differ as either individual assessment or group assessment. As process design variables, self-monitoring and self-reflection reports were commonly used by the researchers (Civitillo et al., 2019; Keppens et al., 2019). In such a process, in which PTs were individually monitoring the VCs and reflecting on their

experiences, it was possible to improve PTs' noticing skills (Civitillo et al., 2019), and professional visions (Keppens et al., 2019). The following sections focused on instructional decision-making and video editing processes as design variables in teacher education.

2.1. Video editing for self-reflection

Although the literature priorly centred on watching and discussing video as the basic methods in teacher training, there is a growing interest in editing and generating video. As a research design variable, the video editing process includes watching the experience and generating new edited VCs by reflecting on the experience. Briefly, the editing of VCs means selecting and combining parts from an entire record of experience. The procedure consists of recording teaching experiences, deciding the parts, gathering the excerpt, and adding reflective thinking.

In the literature, there is a growing interest on video editing procedure (Richards et al., 2021; Sherin & Dyer, 2017). For example, Sherin and Dyer (2017) aimed to encourage teachers to deeply focus and identify student thinking, investigated how teachers edited (called captured) videos of student thinking from their teaching experiences. Moreover, while Richards et al. (2021) aimed to explore the implications of editing (called generating) VCs for professional development, they focused on the complexities and opportunities associated with teachers generating VCs from their teaching experiences. They found that the edited VCs promoted teacher learning. In previous research, Rosaen et al. (2009) underlined that while editing VCs, PTs had opportunities to evaluate their experiences from different perspectives. Moreover, these perspectives positively affected their professional development process. While all research findings were valuable, the current research was aimed to contribute to this emerging literature with a systematic analysis of PTs' video editing processes according to the types and contents of reflection points in the VCs.

2.2. Instructional decisions in video cases

Focusing on instructional decision-making skills, VCs are produced on PTs' teaching experiences to focus on the development of self-reflection (Hawkins & Park Rogers, 2016; Valle, 2017). Utilizing these VCs, PTs are expected to develop an awareness of their instructional decision-making process in their teaching experiences and to transfer this skill to new and unknown teaching situations. Since many context variables are important in the instructional decision-making process, using VCs with a suitable learning environment is provided for a PT to recognize, define, and reflect on these variables. The emphasis here is mostly on self-reflection of their experiences. The PT's limited awareness of the events that occurred during their experience prevents the holistic evaluation and interpretation of the situation (P. J. Rich & Hannafin, 2009a). Using VCs, awareness of the timing can be increased and since watching their edited VCs allow them to reflect on the situation, decision-making process can be more deeply understood (P. Rich & Hannafin, 2009b).

As a design variable, focusing on the instructional decision-making process is valuable for examining whether any improvement in the PTs' awareness of their instructional decision-making process. Especially in this research context, the focus is to deeply

understand PTs' awareness of their instructional decision by analysing the PTs' reflection points in their edited VCs. Before PTs watched or edited the VCs it would be defined the point of view at the beginning of the process. Although the point of views varies, this research is detailed on design processes that includes successful decision (SD) and unsuccessful decision (USD) perspectives while applying VC instruction. It should be underlined that the judgment of what is successful and what is unsuccessful is solely related to PTs' self-reflection. Since the main focus is related to PTs' self-reflection on their teaching experience, the research process does not include the evaluation of any researcher or expert.

3. Methodology

In this study, a case study design was used from a qualitative perspective. According to Creswell (2007), a 'case' can be a single person, more than one person (together or individual), a program, an event, or an activity; it can also represent a process involving several stages that consist of an activity series. In this context, the case in the current research is defined as the research process itself with a methodological perspective.

3.1. The case procedure

The case includes recording the PT teaching experiences, editing processes, and discussions with peers. Detailed information about the case is presented in Figure 1.

The research process begins with informative seminars, including technical procedures on video editing and continuous procedures for four months. Also, the seminar was related to the editing procedure in which PTs should be decided the successful and unsuccessful instructional decisions in their teaching experiences. PTs were informed that the duration of the edited VCs should not exceed 15 minutes. Since PT's video editing skills are crucial and directly affect the research process, the PT is given pre-information on the video editing. After they videotaped the teaching experience, they individually watched the experience back. Afterwards, they decided which decisions, events, and situations they needed to share with their peers; not only did they cut the specified decisions, events, and situations, but they also reflected on their experience. In this concern, all edited VCs included PTs' detailed comments and extra information on the situation related to their instructional decisions. The added information was called the self-reflection points due to its evaluative nature.

The video editing and discussion sessions were then consecutively conducted in triplicate cycles. Since the importance of continued participation in the research was clearly explained at the beginning of this process, each of the PTs regularly participated in almost every discussion session. While the PTs had enough time for video editing, discussion sessions were usually conducted after all experiences were completed. In this regard, the total number of edited and discussed VCs during the research process was forty-eight. The discussion sessions were conducted with 16 PTs and the researcher. Also, it should be underlined that the researchers were only moderators, they did not participate in the discussion topics as an expert. PTs were discussed their experiences through edited VCs.
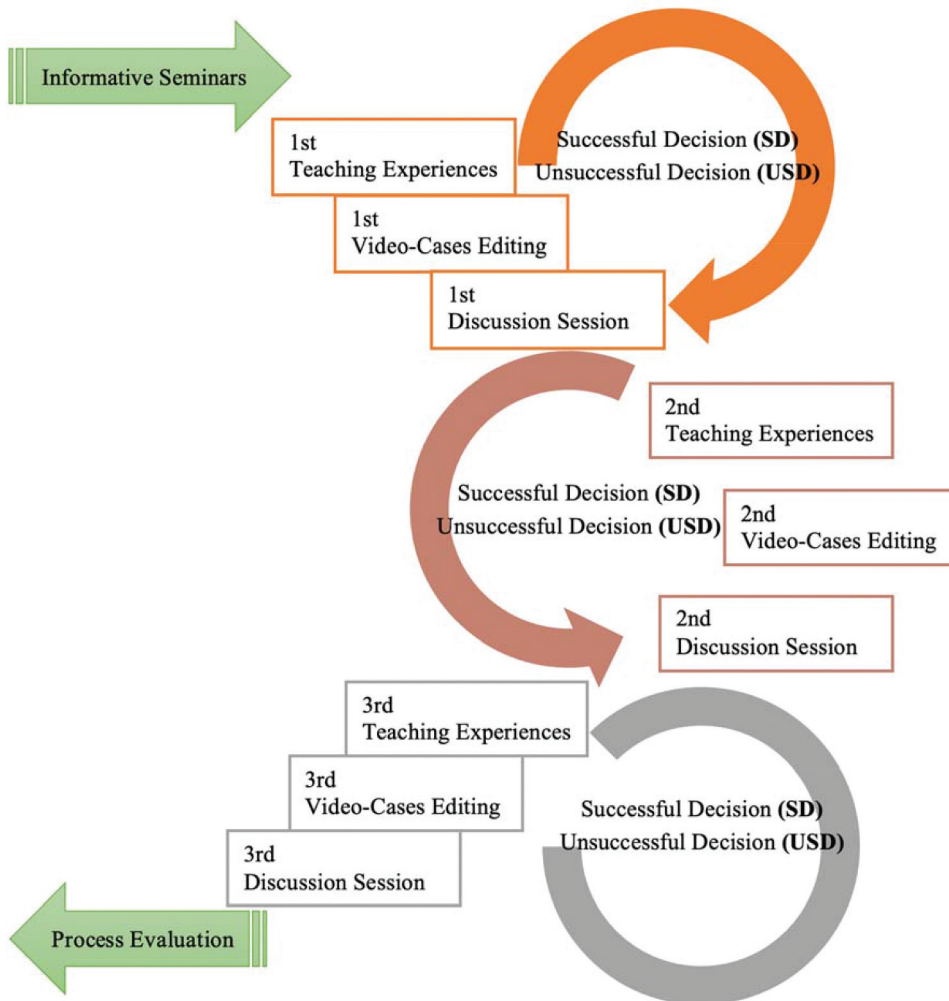
Figure 1. The edited video case research process.

3.2. Participants

The research applied 16 PTs (9 female, 7 male) in the Teaching Practice II Course throughout the last semester of their bachelor's program (computer and instructional technologies education) at the Faculty of Educational Sciences in Turkey. PTs volunteer to participate in the process were enrolled as the study group. Since the research process was independently conducted from any course and the workload and responsibility were high, voluntary and regular participation were of great importance. Afterward, to provide contextual heterogeneity, convenient sampling methods and maximum variation sampling methods were used (Patton, 2014). To ensure maximum diversity, the schools that could be attended through the research period and the teachers in these schools were set as two criteria. Considering teaching experiences, maximum variation sampling enriches contextual factors such as the student profile, learning environment, or administration (see, Table 1).

Table 1. The distribution of participants according to the schools and the teachers.

Schools	The ICT Teachers	Participants
S1	T1	PT1
S2	T2	PT3, PT6
S3	T3	PT2
	T4	PT5, PT11
S4	T5	PT9, PT12
S5	T6	PT15, PT16
	T7	PT7, PT14
S6	T8	PT4, PT8
	T9	PT10, PT13
6	**9**	**16**

The schools varied in the high technology integrated into the teaching process such as smartboards, accessing the internet, and related hardware and software. The teachers, experts on teaching information technologies, were diversified in their seniority. Although, both the schools and the teachers are not the research subject directly, they were detailed to explain the research context. Table 1 is detailed the schools in which the PTs experienced their teaching activities and the teachers advising them.

3.3. Data source

In this study, the three different teaching experiences of 16 PTs were recorded and a total of 48 VC materials were obtained. Each of the VCs including reflection points lasts for 9–18 minutes on average. For instance, the reflection points were as follows: 'I may not have responded in a supportive way to the student who answered my question'. (PT10); 'Realizing that my answer to the student's question was unmotivating, I instantly said that you will be able to do it, I became more constructive and supportive'. (PT12). The edited VCs are exemplified in Figure 2.

When analysing reflection points in edited VCs, all variables in the video, such as sounds and actions, were considered holistically to ensure meaning.

3.4. Data analysis

Analysing data is the process of extracting meaning from data. Deriving meaning from data involves combining, reducing, and interpreting what the participants said and what the researcher saw and read (Merriam, 2009). In this study, the data analysis included inductive reasoning, explanation, and interpretation. To answer the research questions, the edited VCs were analysed according to the reflection points. The analysis process consisted of four different stages in which deriving codes from text, determining the related content in the data set, gathering the related codes into categories, and finally producing themes by combining categories. For example, when the PT3 reflection point in the second VC included "The voice of the class was loud, and I had to intervene … It makes me sad … ", it was coded as teacher perspectives/classroom management. Also, since the reflection point of PT3 implied both the definition and giving a reason on action, it was coded as both describing and identifying reasons.

Figure 2. The examples of preservice teachers' edited video cases.

3.5. Validity and reliability

Transferability, credibility, reliability, and verifiability are the main strategies to provide validity and reliability in qualitative studies (Merriam, 2009, p. 201). According to Merriam (2009), detailed descriptions ensure transferability and consistency of the research. In this regard, detailed explanations were employed to ensure transferability and consistency from the planning to the analysis process of this research. Moreover, while the research was reported, to enhance consistency, the results were supported with direct quotations and interpreted with the related literature. Furthermore, a detailed explanation of the roles of the researchers were also used to enhance credibility in the reporting process. The researchers were only the designers of the process and the moderators of the discussion sessions. There was no relation with the participants as a teacher educator during the research process. Additionally, after 30% of the data were individually analysed by two experts to ensure the credibility of the analysis, the Kappa Cohen coefficient was determined to be 0.85 for the codes in the VCs.

4. Results

4.1. The contents of instructional decisions on edited video cases

Based on the reflection points in the edited VCs, the PTs considered their teaching experiences from two different perspectives, as both the teacher and the student (see, Figure 3).
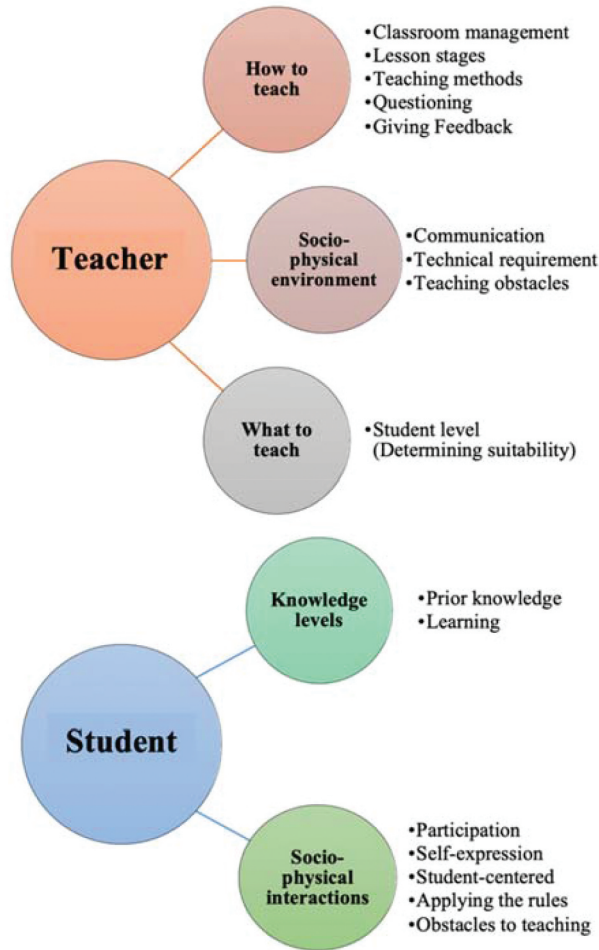
Figure 3. The contents of instructional decisions on edited video cases.

4.1.1. Teacher perspectives on edited video cases

The term teacher perspective is used to indicate the PTs' perspectives as teachers because of the VCs edited from the PTs' teaching experience. In Figure 3, the PTs generally focused on instructional decisions regarding content knowledge, methodology, and the socio-physical environment. Remarkably, they cited content knowledge minimally, which was the subject of the lesson.

Of all the edited VCs, the most centred instructional decisions were on methodology/ how to teach. While dealing with classroom management in reflection points, they mentioned issues related to maintaining silence, wandering the classroom, speaking up, body language, setting and reminding about the rules, participating in the lesson, ignoring negative situations/problematic student behaviours, dominating the classroom, screen control, and time management. 'They did not listen to me while I was practicing. Therefore, I could have asked them to continue the practice after I turned off their screens and let them listen to me'. (PT6_2)

The PT was included in their reflection points regarding the socio-physical environment. The reflection points involved teacher-student communication in the social environment, comprising the situations preventing teaching and technical requirements of the physical environment. Regarding communication, PTs touched on verbal expressions and language usage, tone of voice, attitude, and style. 'I think it is wrong to stop receiving an answer like a coach after I get the answer'. (PT8_1)

4.1.2. Student perspectives on edited video cases

The reflection points include the knowledge level and socio-physical interactions of students (see, Figure 3.). Considering all the reflection points from the student perspective, among the striking findings was that the PT mostly makes educational decisions based on socio-physical interactions. Moreover, socio-physical interactions contain instructional decisions on participation, self-expression, student-centredness, applying rules, and teaching obstacles. 'I was excited to see all the hands up' (PT5_2) Another remarkable result was that PTs mostly remarked on teaching obstacles from student perspectives. These reflections included interrupting the lesson, being late, walking around the classroom (hopping-jumping-running-fighting, etc.), verbal communication (speaking-yelling, etc.), and attracting attention. '(Two students came to the classroom after the lesson started) I have no idea why those students were late'. (PT6_3)

4.1.3. An overview of the contents of instructional decisions

In the first edited VCs, the PTs generally discussed the event in terms of themselves. Although instructional decisions were initially cited from the teachers' perspective, it has been determined that the PTs improved their focus on the student's perspective in the second and third edited VCs. It was possible to determine that while the PTs edited and discussed their teaching experiences, they improved their evaluating ability of the event with a different perspective. Compared with the first edited VCs, the rate of instructional decisions in all fields increased in the cycling editing process. This increase was interpreted as an important indicator that instructional decisions were improved in the research process. Furthermore, when PTs were centring on students in edited VCs, obstacles to teaching were usually cited. Of importance, this phenomenon indicates that PTs just beginning their profession require further experience to enhance their ability to deal with the events on time.

4.2. The reflection types of instructional decisions on edited video cases

Considering the reflection types in the edited VCs, PTs dealt with their teaching experiences in seven themes. These reflection types were recognising, describing, identifying reasons, expressing emotions, judging, analysing, and generalizing (see, Figure 4).

The reflection types of the instructional decisions in the constructed VCs were designed with a pyramid that illustrated the change percentage of the reflection points. According to the pyramid, the category of the describing was the most common in all reflection points, but as it went through up to the upper floors of the pyramid, the frequency of the other categories decreased. Furthermore, it should be underlined that the category of the recognising was related to all other categories, and it could be simultaneous with all other categories.
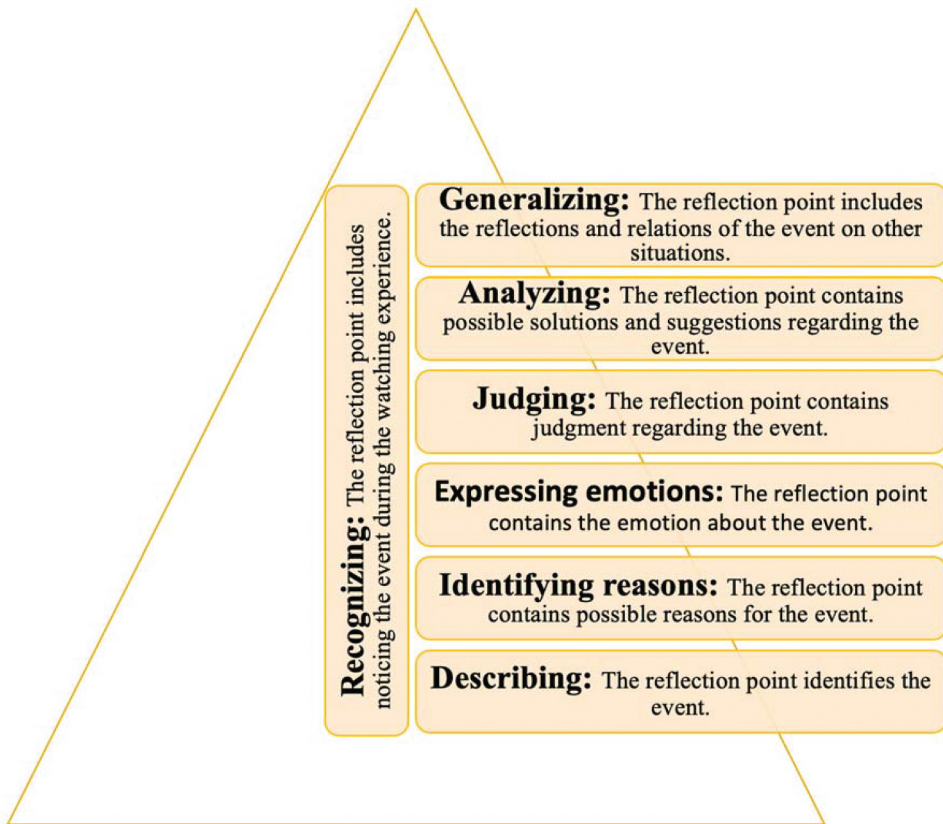
Figure 4. The reflection types of instructional decisions on edited video cases.

4.2.1. Recognising

During the teaching experiences, it is difficult to grasp what is happening in the classroom. In this regard, PTs emphasized that editing their teaching experiences helped to notice many events. They usually noticed the events that occurred during their teaching experience. Moreover, their recognising statements were usually interrelated with USD. While watching their experiences, PTs generally recognised students' behaviours more than their own. Particularly in the communication dimension, they realized the verbal expressions they used about themselves. 'I hardly notice a student going out during my lesson. I do not notice whether he is going out or coming in. I think he gets permission from the teacher of the course'. (PT6_2)

4.2.2. Describing

If the reflection points of the PTs contained what is happening during their experience and if they only defined the event, we coded these statements as description statements. PTs tended to mostly describe the events in edited VCs. In other words, they used more descriptions of positive situations in their reflection expressions. 'I tried to exemplify from daily life at the beginning of the lesson'. (PT2_2)

4.2.3. Identifying reasons

We coded the reflection points of the PT according to the possible reasons for the event. While we were analysing these reflection points in detail, we determined that they usually identified the reason in their experience, especially regarding USD. 'I had to refresh it because I was having a problem with the Wi-Fi connection'. (PT3_2)

4.2.4. Expressing emotions

During the informative seminars, we did not direct PT in any way except how to technically edit VCs. However, they surprisingly added their feelings in their edited VCs in addition to employing emoticons. These statements in the reflection points were coded as expressing emotions. We should emphasize that they usually reflected their emotions on USD, but rarely on SD. 'I was too supposedly helpless to get the class to listen to myself'. (PT16_1)

4.2.5. Judging

While the PTs reflected on their instructional decisions and experiences, they underlined the wrong or righteousness, goodness or badness of the event in the reflection points. Therefore, we coded these statements as judgment statements. The PTs generally judged themselves with USD. In other words, their reflection points including judgment were usually about negative situations. 'I said give a number again and my voice was no longer being heard'. (PT7_3)

4.2.6. Analysing

While the PTs were editing their teaching experiences, they implied solutions regarding the event that occurred during their experiences. Moreover, these statements in reflection points contained suggestions as well as possible solutions to the event. These statements were coded as analysing statements. Although, PTs' expressions of analysing the events increased in the second and third edited VCs, it was quite low for all the three experiences. . 'Instead of going directly to the product formula, I could tell it by narrating'. (PT1_2)

4.2.7. Generalizing

PTs mentioned the relation of the event to other situations or events and its reflection on other situations in the edited VCs. If the reflection points of the PTs contained any relations with others, we coded these statements as generalizing statements. According to generalizing statements, PTs mostly dealt with the events that occurred in USD. 'I was going to demonstrate how to comment on the forum practically, but I could not do it due to smartboard technical problem and I lost 5–6 minutes; this caused the class to get out of control'. (PT13_2

4.2.8. An overview of the reflection types of instructional decisions

The way to understand the change and development in reflection levels of PT is to evaluate the edited VCs for three cycles (see, Table 2).

In the first VCs, the reflection points of PTs usually were the descriptive level with more scenes. In the following edits, they interpreted the events and added detailed expressions apart from describing both the lesson and the event. In the second VC, PTs commonly identified, reasoned, judged, produced solutions, and generalized. In the third edited VCs,

Table 2. The cross-table for the reflection types of instructional decisions.

	1st Edited Video Cases				2nd Edited Video Cases				3rd Edited Video Cases				Total	
	SD		USD		SD		USD		SD		USD			
	%	f	%	f	%	f	%	f	%	f	%	f	%	f
Generalizing	0,97	1	5,60	7	6,92	11	8,85	17	6,03	7	5,84	8	6,13	51
Analysing	0,00	0	2,40	3	1,89	3	7,29	14	0,86	1	5,11	7	3,37	28
Judging	2,91	3	21,60	27	4,40	7	18,23	35	4,31	5	21,90	30	12,86	107
Expressing emotions	1,94	2	4,00	5	1,26	2	7,81	15	0,86	1	7,30	10	4,21	35
Identifying reasons	18,45	19	26,40	33	36,48	58	26,56	51	29,31	34	33,58	46	28,97	241
Describing	75,73	78	40,00	50	49,06	78	31,25	60	58,62	68	26,28	36	44,47	370
Total	**100**	**103**	**100**	**125**	**100**	**159**	**100**	**192**	**100**	**116**	**100**	**137**	**100**	**832**

the reflection points of PTs were frequently the level of reasoning and generalizing. Thus, the PT's ability to analyse instructional decisions improved to a high level at the end of editing and discussing VCs. When the reflection points were examined in terms of SD and USD, among the striking findings was that PT mostly used USD in their edited VCs. PT mostly used USD, especially in the second and third VCs. However, while editing the second and third VCs, they consciously selected and edited cases to be criticized to improve themselves by employing peer review.

5. Discussion & conclusions

In this study, we aimed to explore PTs editing skills in their teaching experiences using instructional decision perspectives. For this purpose, we designed a VC process consisting of three cycles; each cycle consisted of real-time teaching experiences, editing of these experiences, and discussions with peers. We found that PTs tended to edit their instructional decisions in two different ways related to the contents and reflection types. Consistent with other research, we revealed that using VCs editing and discussing their teaching experience enhanced PTs' self-reflection on what happens in reality and how they make instructional decisions (Xiao & Tobin, 2018).

PTs tend to focus more on issues related to themselves in the early stages of their professional development in the VC process with respect to their teaching experiences (Page & Jones, 2018). Furthermore, in research by Kerrins and Cushing (2000), the focus of experts (teachers) and novices (PTs) in VCs differed, and while experts generally focused on student learning, participation, and classroom management in VCs, novices tended to make suggestions to the teacher. Similarly, we revealed that PTs generally considered their self-reflections on instructional decisions from the teacher perspective. Although at the beginning of the process they usually reflected from the teacher perspective, their ability to handle the student perspectives also improved throughout the process. In this regard, we should emphasize that the VC process supported the development of the PTs professional vision. Correspondingly, PTs generally focused on their behaviours in situations at the beginning, but on the effects of their behaviour on students later on (Hawkins & Park Rogers, 2016). Accordingly, systematic analysis of teaching experiences contributes to ensuring that PTs focus more closely on students' thinking during teaching (Bruce & Chiu, 2015). We broadened this comment such that the systematic editing and discussion of the PTs teaching experiences encouraged them to increasingly notice the student perspective.

A notable finding in this research was that while dealing with instructional decisions in teaching experiences, PTs commonly targeted methodology and the socio-physical environment but rarely focused on content knowledge. It is noteworthy to direct their focus to content knowledge to enhance their analytic ability concerning content-related issues (Todorova et al., 2017). Here we revealed that while PTs reflected on their teaching experiences, they remarkably considered their instructional decisions on methodological knowledge, such as classroom management, lesson stages, teaching methods, asking questions, and giving feedback. Use of the PTs' edited VCs positively improved their beliefs, knowledge, perceived skills, and confidence about classroom management during the process (Page & Jones, 2018). Correspondingly, at the beginning of our research, although the PTs did not realize that their bodies could be used as a useful pedagogical tool in the classroom, they became more aware of using their bodies throughout the teaching processes.

Seidel and Stürmer (2014) developed a conceptual framework that included description, explanation, and prediction, which is frequently used in PTs VC analysis. Additionally, the alternative framework naming the level of description included describing, evaluating, and interpreting (Sherin & Van Es, 2009). In our study, we expanded the conceptual framework as the reflection types of PTs instructional decisions in VCs edited that were edited by PTs. Because the focus of our research was PTs self-reflections on their edited experiences, the results differed from the other process. During the editing VCs, we revealed differences in PTs self-reflection types according to only the watching and reflecting process. We found that PTs' self-reflection types consisted of seven phases: recognising, describing, identifying reasons, expressing emotions, judging, analysing, and generalizing.

According to Kerrins and Cushing (2000), in the early stages of the VC process, experts are generally interpreters, and novices are descriptive. Conversely, since PTs tend to provide a definition while watching their edited VCs, in the later stages of the VC process, they also improve self-reflections on instructional decisions (Hawkins & Park Rogers, 2016). Correspondingly, in our research, although PTs tended to describe the events at the beginning of the process, we determined that their self-reflections developed the route of associating the events with others and producing solutions to the events. As a result, we should emphasize that the edited VCs were effective in developing PTs self-reflections on their instructional decisions.

As stated in the quotations of the PTs participating in this process, the VCs enabled PTs to receive concrete and useful feedback, notice their and students' behaviours, and generate ideas about what they could do when encountering similar conditions. Since all teachers have nonverbal teaching knowledge, it is difficult to consciously determine what counts as recyclable content for the teaching profession. This teaching knowledge is based on experiences, efforts, and mistakes and plays an important role in teachers' classroom decisions (Sancar et al., 2020a). VCs facilitate the transfer of such knowledge, experience, effort, and mistakes to PTs through both individual experiences and the experiences of others, and they raise awareness of spontaneous/involuntary decisions (Gazdag et al., 2019). In this regard, while watching and discussing VCs, it is very important to be able to notice and to improve interactions (Keppens et al., 2019).

In the literature, research has revealed that collaborative evaluation and discussion of VCs with peers improve PTs awareness of classroom teaching experiences (Sancar & Deryakulu, 2020b; Hover, 2020; Nielsen, 2015). Although Ulusoy (2020) underlined the

development of PTs' recognising skills using classroom videos, her research, as in many other studies, was not designed to edit PTs' teaching experiences. We expanded the discussion by revealing that PTs' editing of their teaching experience process itself also improved their ability to notice. Moreover, PTs experienced an unusual and enjoyable process that should be experienced by all teachers and PTs with respect to watching and editing their teaching experiences, thus enabling them to enhance awareness about what occurred in their classroom and to evaluate and learn from their experiences. Likewise, watching and editing their experiences helped PTs' support their learning by doing and experiencing, and by increasing their motivation towards the teaching process (Cid-Cid et al., 2018; Yeh, 2018).

We are aware of the need to conduct further research. Although we find that video editing and discussion can foster the development of PTs self-reflections on their instructional decisions, successes and failures, several questions remain, especially about content knowledge, teaching methodology, questioning and student thinking. For example, would the veteran teachers' VCs be beneficial to edit? Would there be a difference between editing the PT's experience or the veteran teachers'? Moreover, the effects of using diversified perspectives in the editing process need to be elaborated, such as questioning strategies or classroom management.

Note

Disclosure statement

Funding

Notes on contributors

Raziye Sancar is of PhD degree and a research assistant at Kirsehir Ahi Evran University, Faculty of Education. Her research interests are educational technology, instructional design, teacher education, teachers' professional development, instructional decision making, digital video cases, and virtual reality.

Deniz Deryakulu is an emeritus professor at Ankara University, Faculty of Educational Science. Her research interests are educational technology, instructional design, individual differences, teacher education and information technology education.

ORCID

Raziye Sancar 🆔 http://orcid.org/0000-0002-2875-9233
Deniz Deryakulu 🆔 http://orcid.org/0000-0002-6974-7183

References

Bruce, D. L., & Chiu, M. M. (2015). Composing with new technology: Teacher reflections on learning digital video. *Journal of Teacher Education*, *66*(3), 272–287. https://doi.org/10.1177/0022487115574291

Cid-Cid, A. I., Guede-Cid, R., & Tolmos-Rodríguez-Piñero, P. (2018). Flipped classroom in preservice teacher training: An approach to a real mathematics classroom. *Bordon, Revista De Pedagogia*, *70*(3), 77–93. https://doi.org/10.13042/Bordon.2018.64127

Civitillo, S., Juang, L. P., Badra, M., & Schachner, M. K. (2019). The interplay between culturally responsive teaching, cultural diversity beliefs, and self- reflection: A multiple case study. *Teaching and Teacher Education*, *77*, 341–351. https://doi.org/10.1016/j.tate.2018.11.002

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Sage.

Dorfner, T., Förtsch, C., Germ, M., & Neuhaus, B. J. (2018). Biology instruction using a generic framework of scientific reasoning and argumentation. *Teaching and Teacher Education*, *75*, 232–243. https://doi.org/10.1016/j.tate.2018.07.003

Gazdag, E., Nagy, K., & Szivák, J. (2019). "I Spy with My Little Eyes . . . " The use of video stimulated recall methodology in teacher training–The exploration of aims, goals and methodological characteristics of VSR methodology through systematic literature review. *International Journal of Educational Research*, *95*, 60–75. https://doi.org/10.1016/j.ijer.2019.02.015

Hawkins, S., & Park Rogers, M. (2016). Tools for reflection: Video-based reflection within a preservice community of practice. *Journal of Science Teacher Education*, *27*(4), 415–437. https://doi.org/10.1007/s10972-016-9468-1

Hover, A. (2020). Candidates use video case analysis to examine teacher questioning strategies. *The New Educator*, *17*(2), 141–156. https://doi.org/10.1080/1547688X.2020.1783413

Hoynes, S., Klemp, T., & Nilssen, V. (2019). Mentoring prospective mathematics teachers as conductors of whole class dialogues - Using video as a tool. *Teaching and Teacher Education*, *77*, 287–298. https://doi.org/10.1016/j.tate.2018.10.014

Kennedy, M. M. (2019). How we learn about teacher learning. *Review of Research in Education*, *43*(1), 138–162. https://doi.org/10.3102/0091732X19838970

Keppens, K., Consuegra, E., Goossens, M., De Maeyer, S., & Vanderlinde, R. (2019). Measuring preservice teachers' professional vision of inclusive classrooms: A video-based comparative judgement instrument. *Teaching and Teacher Education*, *78*, 1–14. https://doi.org/10.1016/j.tate.2018.10.007

Kerrins, J. A., & Cushing, K. S. (2000). Taking a second look: Expert and novice differences when observing the same classroom teaching segment a second time. *Journal of Personnel Evaluation in Education*, *14*(1), 5–24. https://doi.org/10.1023/A:1008152928725

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. John Wiley & Sons.

Nielsen, B. L. (2015). Pre-service teachers' meaning-making when collaboratively analysing video from school practice for the bachelor project at college. *European Journal of Teacher Education*, *38*(3), 341–357. https://doi.org/10.1080/02619768.2014.983066

Page, A., & Jones, M. (2018). Rethinking teacher education for classroom behaviour management: Investigation of an alternative model using an online professional experience in an Australian university. *Australian Journal of Teacher Education*, *43*(11), 84–104. https://doi.org/10.14221/ajte.2018v43n11.5

Patton, M. Q. (2014). *Nitel araştırma ve değerlendirme yöntemleri*. M. Bütün ve SB Demir, \Trans). Pegem Akademi. (Original work published 2002

Rich, P. J., & Hannafin, M. (2009a). Video annotation tools: Technologies to scaffold, structure, and transform teacher reflection. *Journal of Teacher Education*, *60*(1), 52–67. https://doi.org/10.1177/0022487108328486

Rich, P., & Hannafin, M. (2009b). Scaffolded video self-analysis: Discrepancies between preservice teachers' perceived and actual instructional decisions. *Journal of Computing in Higher Education*, *21*(2), 128–145. https://doi.org/10.1007/s12528-009-9018-3

Richards, J., Altshuler, M., Sherin, B. L., Sherin, M. G., & Leatherwood, C. J. (2021). Complexities and opportunities in teachers' generation of videos from their own classrooms. *Learning, Culture and Social Interaction*, *28*, 100490. https://doi.org/10.1016/j.lcsi.2021.100490

Rong, H., & Choi, I. (2019). Integrating failure in case-based learning: A conceptual framework for failure classification and its instructional implications. *Educational Technology Research and Development*, *67*(3), 617–637. https://doi.org/10.1007/s11423-018-9629-3

Rosaen, C. L., Lundeberg, M., Terpstra, M., Cooper, M., Fu, J., & Niu, R. (2009). Seeing through a different lens: What do interns learn when they make video cases of their own teaching? *The Teacher Educator*, *45*(1), 1–22. https://doi.org/10.1080/08878730903386849

Sancar, R., & Deryakulu, D. (2020a). Learning to Teach: Ethnomethodological Analysis of Pre-Service Teachers' Instructional Decisions. *Journal of Qualitative Research in Education - JOQRE*, 8(3), 1029–1058. https://doi.org/10.14689/issn.2148-2624.1.8c.3s.11m

Sancar, R., & Deryakulu, D. (2020b). Video-Duruma Dayalı Öğretimde Bir Yöntem: Öğretmen Adaylarının Kendi Deneyimlerinin Kurgulanması ve Tartışılması. *Journal of Faculty of Educational Sciences*, *53*(2), 515–548. https://doi.org/10.30964/auebfd.683744

Seidel, T., & Stürmer, K. (2014). Modeling and measuring the structure of professional vision in preservice teachers. *American Educational Research Journal*, *51*(4), 739–771. https://doi.org/10.3102/0002831214531321

Sherin, M. G., & Dyer, E. B. (2017). Mathematics teachers' self-captured video and opportunities for learning. *Journal of Mathematics Teacher Education*, *20*(5), 477–495. https://doi.org/10.1007/s10857-017-9383-1

Sherin, M. G., & Van Es, E. A. (2009). Effects of Video Club Participation on Teachers' Professional Vision. *Journal of Teacher Education*, *60*(1), 20–37. https://doi.org/10.1177/0022487108328155

Tilson, J., Sandretto, S., & Pratt, K. (2017). Connecting theory to practice: Using preservice teachers' beliefs, theories and video-recorded teaching to prompt a cycle of praxis. *Teaching and Teacher Education*, *67*, 454–463. https://doi.org/10.1016/j.tate.2017.07.012

Todorova, M., Sunder, C., Steffensky, M., & Möller, K. (2017). Pre-service teachers' professional vision of instructional support in primary science classes: How content-specific is this skill and which learning opportunities in initial teacher education are relevant for its acquisition? *Teaching and Teacher Education*, *68*, 275–288. https://doi.org/10.1016/j.tate.2017.08.016

Ulusoy, F. (2020). Prospective teachers' skills of attending, interpreting and responding to content-specific characteristics of mathematics instruction in classroom videos. *Teaching and Teacher Education*, *94*, 103103. https://doi.org/10.1016/j.tate.2020.103103

Valle, A. M. (2017). Teachers' intuitive interaction competence and how to learn it. *European Journal of Teacher Education*, *40*(2), 246–256. https://doi.org/10.1080/02619768.2017.1295033

Xiao, B., & Tobin, J. (2018). The use of video as a tool for reflection with preservice teachers. *Journal of Early Childhood Teacher Education*, *39*(4), 328–345. https://doi.org/10.1080/10901027.2018.1516705

Yeh, H. (2018). Exploring the perceived benefits of the process of multimodal video making in developing multiliteracies. *Language Learning and Technology*, *22*(2), 28–37. https://doi.org/10.125/44642

Yung, B. H. W., Wong, S. L., Cheng, M. W., Hui, C. S., & Hodson, D. (2007). Tracking pre-service teachers' changing conceptions of good science teaching: The role of progressive reflection with the same video. *Research in Science Education*, *37*(3), 239–259. https://doi.org/10.1007/s11165-006-9024-7