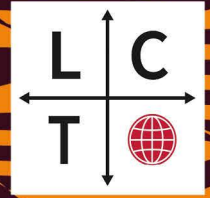EDITED BY
NAMALA TILAKARATNA
AND ESZTER SZENES

L | C
T | 🌐

DEMYSTIFYING CRITICAL REFLECTION

Improving Pedagogy and Practice with Legitimation Code Theory

Legitimation Code Theory

Routledge

9

KNOWLEDGE-POWERED REFLECTION IN TEACHER EDUCATION

Semantic waves and genre-based writing practice of museum experiences

Nóra Wünsch-Nagy

Introduction

Demonstration of reflective thinking and reflective practice is part of the expected outcomes in teacher education programs. Although there are numerous descriptions of what is expected from teacher trainees to complete a reflective assignment, the concept of reflection is used in reference to so many activities and processes that it remains difficult to grasp objectively (e.g. Ryan & Ryan 2013). During a course on multimodal literacy development for English teacher trainees, I set out to make an impact on the way students demonstrate their reflective skills through a set of pedagogical tasks. My main objective focused on developing the group's language and multimodal literacy skills, and I also aimed at challenging the way students responded to cultural and pedagogical experiences.

First, this study reviews the challenges and considerations of developing reflection as a cognitive process demonstrated through language, and then it reports on possible pedagogical solutions to achieve positive change in the students' reflective practice. In doing so, the study draws on the concept of *semantic waves* from Legitimation Code Theory (Maton 2013, 2020) and examines the shifts between everyday and more specialized knowledge demonstrated in the students' classroom dialogues and writing assignments. During the course, writing tasks were carefully planned based on a genre-based approach to writing instruction to provide a scaffolded pathway through tasks with different purposes. Apart from aiming at reflection in writing, students received guidance in their spoken reflection tasks during the collaborative dialogues built around exhibition visits. The main organizing principle for both the scaffolded genre pathway and the lessons was the use of semantic waves in pedagogy, assessment and analysis.

Reflective practice in teacher education

In the context of teacher education, reflection has become a concept with a multitude of complex meanings, models and frameworks. Vaguely defined, reflection might seem both as an everyday task and a challenge for students who are required to show evidence of their reflective skills either in speaking or writing. Reflection is often understood as a written assignment, a pedagogical task, pedagogical practice, or a cognitive process. To further complexify the situation, reflective assignments might include critical reflection essays, learning journals, reflective journals, critical reflection reports, case studies, reflective text analysis, and reflective paragraphs (e.g. Szivák 2014; Tilakaratna & Szenes 2021). For example, in Hungarian teacher education programs, students are expected to write a portfolio, in which reflection takes the form of a larger text, and it also has to be part of every lesson plan and report, and either integrated or standalone written documents (Kucserka & Szabó 2015). There are recommendations to divide the career path reflection essay (*pályakép reflexió*) into three main parts, such as description, analysis/argumentation and self-evaluation. Within reflective writing assignments, teacher trainees are expected to demonstrate the integration of theoretical frameworks in their pedagogical practice, shifting between personal experiences and academic knowledge (e.g. Bolton 2010; Kucserka & Szabó 2015; Stevenson et al. 2018). In short, students are expected to make tacit knowledge explicit through reflection.

Related to this, pedagogical tasks which encourage reflection as a mental activity include various written assignments described as reflective essays and also spoken tasks either individually or as a collaborative activity, for example, as dialogues between mentors and teacher trainees. However, what exactly students and teachers understand by such an assignment often remains unclear (e.g. Calderhead 1989; Hatton & Smith 1995; Ryan & Ryan 2013). Indeed, the question remains what text type teachers are expecting students to write when they give instructions such as '[r]eflect on…'. This area of reflective pedagogy remains to be researched.

Inspired by Dewey (1933), reflection as cognitive process and reflective thinking have been defined as the conscious thinking and analysis of current, previous actions and experiences, and what and how people have learned during this process. It includes a high level of awareness of one's own knowledge, assumptions and experiences in the context of a theoretical framework, either during or after an activity as categorized by Schön (1983) as *reflection-on-action* and *reflection-in-action*. An important aspect of reflective thinking is the integration of academic knowledge in the context of a personal experience. In this context, one challenge of the development of reflection as a cognitive process is that it is time-consuming. As teacher cognition research reported (Westerman 1991; Borg 2003; Gatbonton 2008), there are significant differences between novice and expert teachers' cognitive practices simply because novice teachers need time and experience to integrate

pedagogical knowledge in their practice. Such research reveals that although reflective thinking can be cultivated and scaffolded through pedagogical tasks, it cannot substitute pedagogical experience.

As a pedagogical practice, reflection is expected to become part of teachers' everyday routine and it needs to be demonstrated through written and spoken reflective tasks. The reflective teaching practice is a cyclical, active and dynamic process which follows the stages of planning, action, data collection, analysis, evaluation, and reflection (Szivák 2014). The common traits of the various models of reflective practice include description, analysis, evaluation with the outcomes of solving problems and raising awareness of one's own pedagogical practice which integrates academic knowledge in everyday routine. In this regard, reflection also depends on collaborative dialogues among colleagues (Cruickshank et al. 1981; Chick 2015), which indicates the need for development of dialogic skills. In the Hungarian context, reflective practice in education is defined as thinking, practice and cognitive strategy that continuously and consciously analyzes pedagogical activities and guarantees teacher's continuous self-assessment and development (Szivák 2014: 13). In summary, reading the various guidelines and research studies on reflective thinking and practice in teacher education, one might notice that the term 'reflective' is used more like an epithet in front of a range of teaching-related activities, such as reflective dialogues, reflective analysis, reflective evaluation with high expectations from teacher trainees. For this reason, a clear definition of expectations and assessment criteria in connection with reflective assignments needs to be shared with students.

Three aspects of reflection in Hungarian teacher education

In the Hungarian context, expectations of the reflective practitioner may seem demanding: they need to be able to write about their professional identity, their relationship with the teaching profession, planning, goals, competences, motivation, and demonstrate, evaluate, interpret their own professional development while discussing each teacher competence (Szivák 2014; Kucserka & Szabó 2015). In this complex framework of various aspects of reflection, three main concerns have become salient.

Firstly, in connection with self-reflection and self-assessment, teacher trainees might feel as though they are in a vacuum where they need to report on their own experiences without much understanding of what is expected from them or what they need to consider as reflection-worthy. Also, students might concentrate too much on their own personal reactions and opinions without contextualizing them or viewing them through an objective lens. Such a situation might create a kind of Narcissus-effect with the teacher trainee as the mythological figure who carries out reflection only for reflection's sake. For this reason, courses that aim at building reflective skills need to explicitly focus on contextualization with the guidance of a teacher, if possible, supported by group

dialogues. Two pedagogical approaches can contribute to dealing with this issue: contextualization of experiences within local and international environments, and collaborative dialogues which promote the co-construction of meaning made during teaching experiences (e.g. Wells 2007).

Secondly, the main purpose and outcome of reflective practice is developing awareness and conscious decision-making in teacher trainees. A major challenge, as mentioned above, is that such development takes much time and needs to be based on experiences. One way to guide this process may be found in a variety of explicit teaching practices that scaffold learning, writing and speaking about pedagogical experiences at the early stages of their reflective practice. Such pedagogical models can be found in genre-based pedagogy informed by Systemic Functional Linguistics (hereafter: genre pedagogy) and its pedagogical model, the Teaching-Learning Cycle (Rothery 1994). In second language higher education contexts, the positive impact of genre pedagogy has been emphasized in connection with its influence on the development of genre awareness (Yasuda 2011), with special focus on summary writing (Chen, Y. S. & Su 2012; Yasuda 2015). The necessity of pedagogic metalanguage for teachers has also been discussed as a major factor for the success of the pedagogy (Rose & Martin 2012). Another beneficial solution lies in the potential of field trips to museum as sites of informal and multidisciplinary learning. Museums have been identified as powerful sites of learning for teacher trainees where they can see theory in action and observe how pedagogical knowledge transcends formal learning contexts (Clark et al. 2016), and practice metacognitive skills while promoting museum literacy (Sims 2018).

Finally, one of the most defining characteristics of reflective practice and reflective writing is finding and verbalizing connections between personal experience and theoretical knowledge. As Tilakaratna & Szenes (2021: 105) point out, a major challenge in this regard is that "unlike learning traditional disciplinary content, critical reflection requires students to examine their actions, behaviour and feelings from a theoretical perspective". Not only does such a situation confirm the above-mentioned need for experiences in a guided learning plan over several courses, but it also indicates the need for a transparent model which explains, visualizes and scaffolds the links between different subjective and objective knowledge. One framework that fulfils such a role is Legitimation Code Theory (LCT). LCT is a sociological framework for studying practices that comprises different sets of concepts or 'dimensions', each of which explores different facets of practice. One dimension is Semantics which both theorizes and visualizes the means by which legitimated practices appear in different contexts (see Maton 2013, 2014, 2020). Specifically, the Semantics dimension offers a toolkit which can serve as a pedagogical, assessment and data analysis tool that gives insights into how context dependency shapes texts. Context-dependence reveals the relative degree to which theories and concepts and concrete experiences are related. Recent studies which rely on LCT to study reflective practice include research in the field of social work and business (Boryczko 2020; Tilakaratna & Szenes 2021), teacher education (Macnaught 2021) and nursing (Brooke 2019).

Research question

An important implication of Schön's (1983) observations of the reflective practitioner is their use of language: "One must use words to describe a kind of knowing, and a change of knowing, which are probably not originally represented in words at all." Although this sentence might not intentionally highlight the role of language in reflective practice, for linguists and language teachers it underlines the unique access only language provides in terms of integrating and sharing reflective observations on knowledge practices. Language development aims in this context to surpass vocabulary building or focus on skills development. Instead, the key role of language underlines the necessity of explicit teaching approaches which guide students in using language effectively in reflective dialogues and written assignments. There are several aspects of reflective practice which need to be addressed through pedagogical practice: different skills such as analysis, interpretation and evaluation; demonstrating links between theoretical knowledge and concrete experiences in connection with an event; and developing dialogic and writing skills to show evidence of reflective thinking. In this context, I set out to find ways to influence and change teacher trainees' reflective thinking skills within the context of a course on multimodal literacy development.

Context

In order to find answers to this question, I examined the details of a course I designed and taught on multimodal literacy development called *Making Meaning with Visual Narratives* at Eötvös Loránd University (ELTE), Budapest in 2019. The course focused on social semiotic multimodality (e.g. Kress & van Leeuwen 1996; Kress 2010) and academic language development. However, the explicit teaching of reflection per se was not the main objective of the course. Rather, reflective practice was integrated in a series of dialogues and writing tasks. Two exhibition visits were at the core of the course, and the main museum visit took place at the Petőfi Literary Museum in Budapest (PIM), where a temporary exhibition presented the life and work of Géza Csáth, born József Brenner (1887–1919), a Hungarian psychologist-writer who became well-known for his struggles with drug abuse, violence, and suicide. The choice of such a controversial literary figure was a conscious decision with the aim of inciting dialogues. The other exhibition visit took place in a smaller gallery near the university. The students in the course were doing their teaching practice in secondary schools during their final year at the university. They were enrolled in two majors, and their common discipline was English as a foreign language.

The course was divided into three parts over 13 weeks. First, the students were introduced to multimodal analysis focusing on the main concepts of social semiotic multimodal theory, visual analysis, image-text relations, and multimodal reading strategies. The second phase of the course was built around the two exhibition visits. Before the visits, the group learnt about language and

learning in museums. After the visits, the students joined discussions on the online educational platform used during the course, and the lesson that followed the visit was dedicated to dialogues about various aspects of the visit. To conclude the term, in the final phase of the course, the students presented a project such as a lesson plan or a presentation applying the approaches they studied during the course. During the course, the students were requested to complete different types of written assignments ranging from short reflective tasks through image descriptions, reviews to presentations.

Methodology

The study presented here takes a case study approach to classroom research and relies on the qualitative analysis of different sets of data collected during the course. These data sets include: the course syllabus, the students' written texts (with a special focus on exhibition reviews), and the students' post-course feedback questionnaire answers. The thematic analysis of the students' feedback was based on the qualitative content analysis of Saldana's (2009) coding directions. The students' reviews were examined through the analytic codes of LCT Semantics. The course content was analyzed for genre drawing on genre-based pedagogy from SFL and LCT Semantics.

Genre pedagogy

The SFL view on genres guided the course design in terms of writing tasks. In this approach, genres are viewed as

> staged, goal-oriented social processes. Staged, because it usually takes us more than one step to reach our goals; goal-oriented because we feel frustrated if we don't accomplish the final steps; social because writers shape their texts for readers of particular kinds (Martin & Rose 2008: 6).

These three aspects of genres provide both the students and the teacher with the clarity of the context, audience and organization of their writing. Such kind of genre pedagogy reveals the organizing principles of different genres through explicit pedagogy. In Hyland's words, it is "perhaps the most clearly articulated approach to genre both theoretically and pedagogically" (2007: 153). Rose and Martin (2012) introduce the most common school genres categorized by their social purposes and their most common features and their main social functions such as engaging, informing and evaluating. Their detailed taxonomy with information about the social purposes and stages of each genre provides teachers with a metalanguage that helps them create well-defined and scaffolded writing tasks. Influenced by the detailed genre map by Rose and Martin (2012), I included six writing tasks in the course design:

- a short recount of childhood reading experiences in about 300 words,
- a short recount of a memorable museum experiences in about 300 words,
- image descriptions,
- multimodal text descriptions,
- an exhibition review,
- and presentation of a multimodal text analysis or lesson plan.

The first two writing tasks aimed at encouraging students to recall some of their own memories and make them think about what they meant to them. They gave me insights into how students approached these experiences: whether they contextualized them within larger conceptual frameworks or focused mostly on the emotional and social aspects of their experiences. The image and multimodal text description tasks gave students the opportunity to practice the freshly gained knowledge of social semiotic multimodal theory in an objective manner. They were also asked to carry out picture research based on some guidelines.

   For the next writing task, students were introduced to the genre of reviews within the response genre family. They read model reviews in popular literary and cultural magazines, and then the group deconstructed some sample texts based on the genre stages of *Context, Description*, and *Evaluation*. The review genre task aimed at encouraging students to control their response to a museum exhibition through thinking about the context and providing a detailed description before moving on to evaluating the text. This writing task asked students to take on the role of a language teacher writing a review for fellow teachers about the exhibition in a language teaching magazine. Such an approach resonates well with the expectations of reflective practice. In my text analysis, I focused on how successfully the students created the reviews based on the expectations of the genre. The final presentation task invited students to view an experience or a concrete multimodal text through the theoretical framework of the course. After the course, the final anonymous feedback on the course invited the students to reflect on their learning experiences.

LCT: Semantic gravity and semantic waves

The idea of context-dependency was introduced to the students to guide them in organizing their thoughts around the theoretical framework of the course and the experiences of museum visits. Context-dependency is theorized in the Semantics dimension of LCT through the concept of *semantic gravity*. The dimension of Semantics is centred on two organizing principles underlying practices: *semantic gravity*, which explores context-dependence, and *semantic density*, which explores complexity (Maton 2013, 2014, 2020). These two concepts can be enacted either together or separately. In this study, semantic gravity is enacted on its own to explore the organizing principles of the course content and the students' reviews in terms of their context-dependence.

Semantic gravity represents a continuum of strengths with infinite capacity for gradation and variation (Maton 2013: 110). Stronger semantic gravity indicates more context-dependence; for example, more concrete examples, such as the description of a lesson or what someone has seen at an exhibition. Weaker semantic gravity indicates less context-dependence; for example, less focus on manifest experiences and more on generalized or abstracted ideas. Semantic gravity can also be traced across time and text time as *semantic profiles* (Maton 2013, 2014, 2020). As Figure 9.1 illustrates, a semantic profile shows strengths of semantic gravity (and/or semantic density) on the *y*-axis and time on the *x*-axis. The profile traced by analysing strengths of (in this case) semantic gravity over time can take any shape and that pattern may have significant implications for practice. Figure 9.1 shows three illustrative profiles for semantic gravity, which is weaker at the top (more general or abstract) and stronger at the bottom (more particular or concrete). 'A' traces a *high flatline* of semantic gravity: relatively context-independent practices, such as abstract discussion of theories. 'B' traces a *low flatline* of semantic gravity: practices remain constrained in their own context, such as personal responses or recounts. 'C' traces a *semantic gravity wave*, indicating movements of context-dependence through the text, such as starting a lesson with the description of an image (concrete, particular – stronger semantic gravity) to introduce the concept of colour theory (weaker semantic gravity), and then listing more examples on the various colour schemes in paintings (stronger semantic gravity). *Semantic gravity waves* can begin and end anywhere on the profile and take many shapes; the key is that they involve shifts in semantic gravity in both directions.

Successful student writing has been found to produce semantic waves, which indicate shifts between experiences and specialized knowledge (Szenes et al. 2015). When considered in the longer text time of a lesson or course plan, the
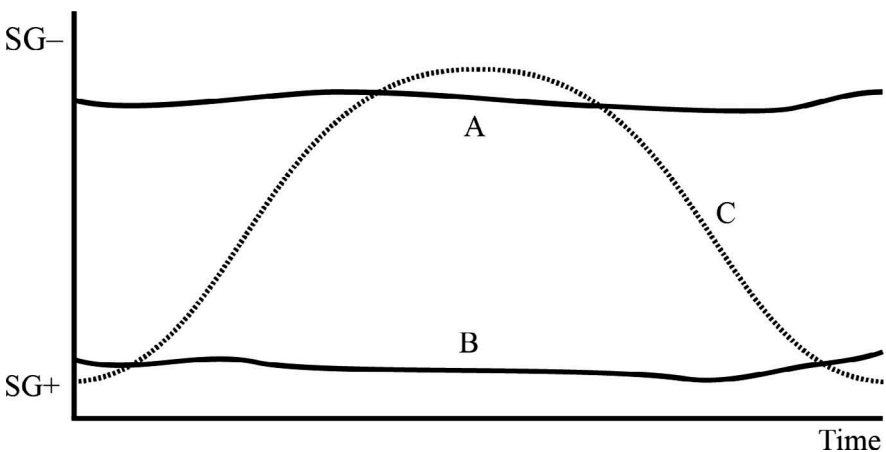

FIGURE 9.1 Three semantic profiles
Source: Maton (2013: 13)

graduality of semantic waves also supports the idea that knowledge-building takes time and needs to be carefully guided towards a successful outcome.

During the course, one lesson and several shorter discussions were dedicated to the concept of semantic gravity and its significance in writing and oral reasoning. The students read an article about semantic gravity (Ingold & O'Sullivan 2017) and watched a short video about the role of semantic waves in reflective writing (AUT literacy for assessments 2018). During the data analysis, I relied on the concept of semantic gravity and semantic waves to analyze the course content and the students' reviews. For the purpose of transparency in data analysis, I created a *translation device* (Maton & Chen, T. H. 2016), which shows how a concept is realized within a specific problem situation, including indicators and examples from the data. This is how the analysis of the data becomes explicit and transparent. My translation device demonstrates the degrees of semantic gravity examined in these texts, presented in Table 9.1. This translation device was developed based on other research studies enacting semantic gravity (Maton 2009; Georgiou 2016; Kirk 2018).

TABLE 9.1 Translation device for semantic gravity of students' exhibition reviews

Semantic gravity coding categories	Description of coded content	Example quote from student reviews
SG– –	Student shares a theoretical principle, specialized or abstract knowledge without reference to the text/experience	The anomalies of a given social reality are and always were the chief concern of most modern Hungarian writers. (S3)
SG–	Student describes the text/experience while explicitly providing some references to theoretical views, multimodal analysis and pedagogical perspectives.	Visitors go through a non-linear path where they encounter Csáth's *Gesamtkunstwerk*. (S3)
SGØ	Student summarizes the text/experience.	It contains visual images (uniquely rich and so far never seen by the audience), tactile, witty elements, and also random verbal quotations from his diary. (S3)
SG+	Student describes text/space and objects/experience with concrete examples. Shares suggestions about pedagogical practice.	It is highly recommended for any language teacher who wants to create a multimodal learning experience. (S3) There is a voice recording of the author's daughter, which brings the listener very close, almost to an intimate distance to her notorious father. (S3)
SG++	Student reflects on personal engagement and emotional reaction in connection with a text/experience.	As I read these sentences, I felt pain and sadness. (S9)

The strengths of context-dependency were determined based on the analysis of complex and simple clauses. Five levels of semantic gravity were defined based on the knowledge practices the texts exhibited. The details of these five levels are described in the 'Description of coded content' column. The description of the coded content explains how students describe a text or an experience and how they link it with theoretical principles or specialized knowledge. An experience can include any individual or group activity, a lesson or a critical event. In this analysis, texts refer to multimodal texts such as an exhibition, a film, a website, or an illustrated book. During the lessons, the three main levels of concrete experiences, generalized ideas and theories were introduced to the students in the context of exhibition and teaching experiences.

Dialogues and exhibition visits to support knowledge-building

From a pedagogical perspective, it is important to highlight the integration of dialogues and museum visits in the course. Exhibitions offer a wide range of pedagogical learning outcomes, and as Blunden and Fitzgerald (2019: 194) have pointed out, museums are "the ultimate multimodal classroom, where students have the opportunity to engage through multiple modes with authentic and/or original objects, records, artworks and other content related to their studies". However, an exhibition visit without guided discussions would remain a simple memorable experience. Dialogic interaction can contribute to professional growth and support reflective practice (Chick 2015; Farkas 2019), and for this reason, collaborative dialogues dominated each lesson with only occasional monologic episodes during which I introduced the students to a new concept or demonstrated model text analysis. The discussion of texts and museum visits were guided through dialogues, giving the students enough time to comment on each other's opinions and insights. During these dialogues, students were often reminded to use semantic waves to structure their reasoning either by providing evidence to their theoretical comments or expanding the description of an image, text, or experience by finding a link with the discussed theoretical framework of multimodality. The exhibition visits were scaffolded with tasks before, during, and after the visit. The students were introduced to research on the role of language in learning in the museum, and they were encouraged to observe multimodality in action. During the Csáth exhibition visit, the students received guidance with a list of questions about the exhibition as a multimodal space, the use of language, disciplinary learning and second language learning with extended discussion points.

The writing and speaking tasks included:

1. Writing task 1: Short recount of a memorable museum experience
2. Writing task 2: Short recount of childhood reading experiences
3. Speaking task 1: Picture/Text description
4. Speaking task 2: Picture/Text description

5. Writing task 3: Picture research and description
6. Writing task 4: Picture research and description
7. Speaking task 3: Book presentation
8. Writing task 5: Exhibition review
9. Presentation task

The questions in the end-of-course questionnaire included:

1. Which tasks did you enjoy the most? Why?
2. Which tasks did you enjoy the least? Why?
3. In what ways do you think the course has helped you to learn something new? Specify at least three new things you have learned during the course.
4. In what ways have the exhibition visits contributed to your learning?
5. What did you like about the course?
6. What would you change about the course?

After the exhibition visit, I initiated an online discussion on the educational platform used during the course to keep the conversation going until the next lesson. During the lesson after the visit, the group reflected on their experiences, and discussed the pedagogical potential of the visit as well as the idea of introducing controversial topics and figures to their own students.

To find answers to my question regarding ways of influencing students' reflective thinking, I relied on the data sets presented in Table 9.2 and their analysis. The students' end-of-course-questionnaire was handed in anonymously, and the students signed a consent form to participate in the research.

TABLE 9.2 Data sets collected during the course

Data sets	Analytical approach	Focus	Number of texts
Course plan	LCT semantic gravity	Writing and speaking tasks	1
Students' exhibition reviews of the Csáth exhibition	LCT semantic gravity; genre stage analysis	Knowledge practices in the reviews	9
Students' answers in the end-of-course questionnaire	Thematic analysis	Students' reflection on the course in terms of knowledge building and development	9

Findings and discussion

The semantic gravity analysis of the writing and speaking tasks focused on the strength of context-dependency for each writing task and whether the students were expected to integrate specialized knowledge or theoretical frameworks into

their writing. Each task was assigned a relative semantic strength in terms of its context-dependency and connection to either experience or specialized knowledge. As demonstrated in Figure 9.2, this can be modelled as a gradually rising semantic wave. The first tasks aimed at activating their own experiences but were not graded due to their personal tone. During the various description tasks, they were guided towards using multimodal references and analytical approaches instead of expressing their personal preferences. By the time they arrived at writing the reviews, enough knowledge was scaffolded to expect students to take an analytical perspective that helped to distance themselves from solely focusing on the description of an event or their emotional responses. The final presentation task was the main outcome of the course: it encouraged students to find their own research topic and analyze it from a theoretical perspective through analysis and interpretation. The pedagogic design depicted by the gradual strengthening of the wave in Figure 9.2 aimed at making the students feel confident about working with multimodal images and exhibition experiences.
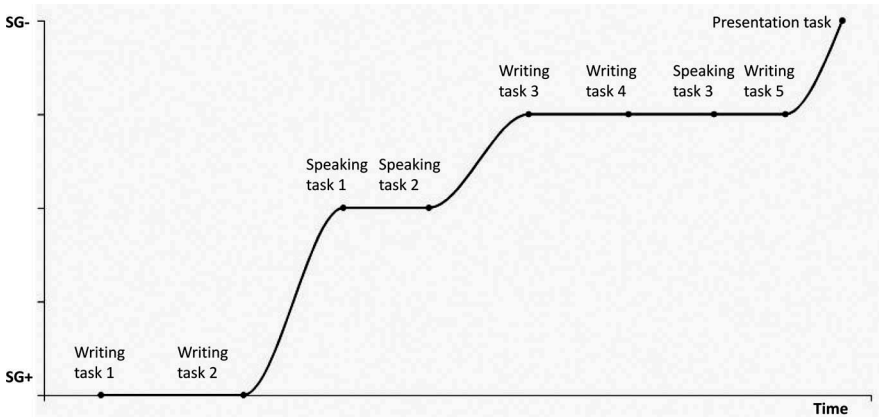

FIGURE 9.2 The writing tasks presented in a semantic wave

Genre analysis of the students' reviews revealed that out of nine reviews, seven followed the typical genre structure with minor modifications. One student wrote a personal response with some descriptive paragraphs. One student diverted from the task and created a guide with multimodal perspectives for language teachers about the exhibition. This student did this on purpose, being inspired by the exhibition. Except for the one personal response, the students took the role of the language teacher writing the review for fellow teachers, and they shared pedagogical perspectives in the evaluation of the exhibition. The detailed overview of the genre stages can be seen in Table 9.3.

Following the genre stage analysis, the reviews were coded using the web application SG-Plotter Heroku App. The reviews, except for the one personal response, demonstrated a range of semantic profiles. The main objective of

TABLE 9.3 Genre stages of the reviews

Student	Genre stages
S1	Context ^ Description ^ Evaluation
S2	Context ^ [[recount]] ^ Evaluation ^ Description ^ Evaluation
S3	Context ^ Description ^ Evaluation
S4	Context ^ Description ^ Evaluation
S5	Context ^ Description ^ Evaluation
S6	Context ^ Description ^ Evaluation ^ Evaluation
S7	Context ^ Description ^ [[personal response]] + Evaluation
S8	A guide for teachers on multimodality and the exhibition
S9	[[recount]] ^ [[personal response]] ^ Description ^ [[personal response]]

Note: The caret sign ^ is used in SFL genre theory to indicate that the stages are in a sequence in the structure. The square brackets [[...]] indicate an embedded genre, i.e. a genre functional as a genre stage.

introducing the idea of semantic gravity to the students was to help them understand that persuasive and effective texts shift between different levels of context-dependency i.e. semantic gravity. They were reminded that they should avoid writing in semantic flatlines for academic tasks except when a task specifically asks for a text typically demonstrating one, for example, an anecdote. Table 9.4 demonstrates the analysis of a student's review that includes most of the common traits of the students' approach to simultaneously writing about the exhibition as a group experience, pedagogical event and multimodal text. In the introductory paragraphs, students shared basic information about the exhibition and the author, sometimes with literary commentary. The second paragraph of the texts focused on the description of the exhibition through a multimodal lens using concepts from the analytical tools they studied during the course. Finally, the last paragraph gave an evaluation from a pedagogical perspective, focusing on the learning potential for second language learners. Seven out of the nine reviews effectively wove different types of knowledge and experiences together.

This coding is demonstrated as a semantic wave in Figure 9.3 below. From a pedagogical perspective, there is a significant difference between sharing the simple coding and the visual representation of the analysis with the students. This graph provided visual scaffolding to support understanding of the concept of semantic waves, and thus made grasping and recalling the idea of changing perspectives easier.

The students' feedback was then analyzed to gain insights into how they experienced the course and reflected on its outcomes for their own knowledge-building. First, the answers were coded, and then codes were organized into main themes. The major themes with some illustrative examples are presented in Table 9.5 below.

TABLE 9.4 Semantic gravity coding of a student's review

The anomalies of a given social reality are and always were the chief concern of most modern Hungarian writers. [SG– –] Yet there have always been important and often neglected artists whose work reveals an entirely different orientation. [SG–] One realizes just how unusual the fiction is of this highly gifted early-twentieth-century Hungarian writer Géza Csáth (1887–1919) when one reads, for example, the stories of *The Magician's Garden*. [SG–] This polymath is usually classified as decadent and often questioned on his position in the Hungarian literary canon, however his work and life do reveal important affinities with that of the first generation of Hungarian modernists, especially with the early poetry and prose of his cousin, Dezső Kosztolányi. [SG–]

The Magician's Death at the Petőfi Literary Museum offers a true multimodal experience. [SG–] Visitors go through a non-linear path where they encounter Csáth's *Gesamtkunstwerk*: [SG–] it contains visual images (uniquely rich and so far never seen by the audience), [SGØ] tactile, witty elements, and also random verbal quotations from his diary. [SGØ] There is a voice recording of the author's daughter, which brings the listener very close, almost to an intimate distance to her notorious father. [SG+] To exaggerate this intimacy between the visitor and Csáth, one can have a close look at his personal notes about his sexuality and mental deterioration. [SG+] These various paths of discovery offered by the museum contribute very much to the semiotic work that one gets involved in as a visitor of the exhibition. [SG–]

This is a special and unordinary experience by the Petőfi Literary Museum. [SG+] Not just because it highlights sensitive topics (e.g., addictions, sexuality), [SGØ] but also because it leaves the interpretation to the visitor, which can be a double-edged sword. [SG+] If language teachers consider taking an L2 class to the exhibition some preparation should take place beforehand. [SG+] Project-based learning can help to prepare for the visit: [SG-] reading a short story in English by Csáth, [SG+] conducting some short research on his life, [SG+] exploring what kind of addictions he suffered from and what his motifs were – just to mention a few. [SG+] After the visit a reflection and an open discussion with the group are very much advised. [SG+] It is highly recommended for any language teacher who wants to create a multimodal learning experience. [SG+]
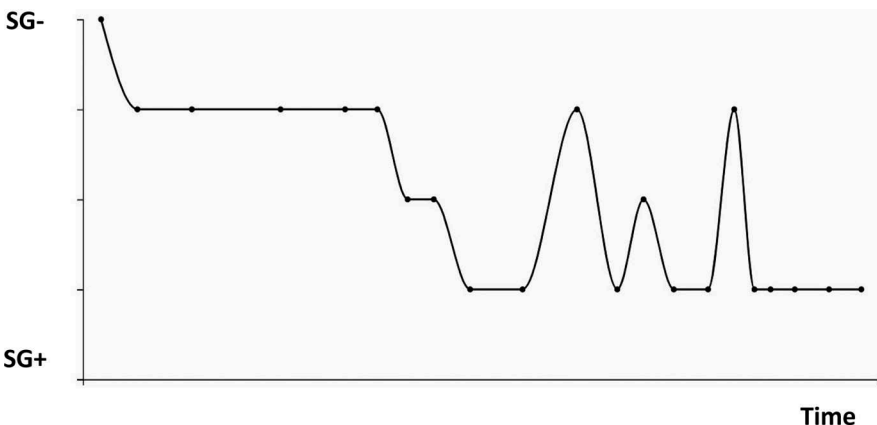

FIGURE 9.3 The semantic profile of a review

TABLE 9.5 Students' answers after the course

Questions	Themes	Illustrative quotes
Which tasks did you enjoy the most? Why?	EXHIBITION VISIT REVIEW WRITING PRESENTATION	It was an interesting exhibition and due to this (writing) task I paid more attention – I paid attention differently. To tell the truth, I hated the idea of presentation at the beginning of the course. However, it was my favourite at the end. I liked that the topic was optional. I enjoyed presenting and listening to my peers' presentation, too. I could learn more about them, as well.
Which tasks did you enjoy the least? Why?	DIFFICULT READING	I cannot remember anything in particular. There readings were quite difficult though.
In what ways do you think the course has helped you to learn something new? Specify at least three new things you have learned during the course.	VISUAL LITERACY MULTIMODALITY AWARENESS	I learned to take a whole new perspective to look at every single movie poster, advertisement etc. after the class. Coursebook layouts and their influence on learners, text displays and their meaning, it encouraged me to use more books, esp. picture books and pictures in my classes (they work wonderfully).
In what ways have the exhibition visits contributed to your learning?	PEDAGOGICAL APPROACH THEORY/PRACTICE KNOWLEGE-BUILDING	I was more conscious during the visits and I was given help to better categorize what I see: how different features contribute to the exhibition. How to gather separate but relevant information and make a whole piece.
What did you like about the course?	TEACHER'S PERSONALITY AND TEACHING WRITING TASKS EXHIBITION VISITS MULTIMODALITY	The parallel between theory and practice. It's not a usual thing in higher education. I liked your attitude and representing style. It was one of the courses of which I didn't have to be afraid and dread every week when going to class. The topics were interesting and useful for teaching, however, the theoretical parts were difficult.
What would you change about the course?	READING	As the reading tasks were difficult, some additional help could be useful. For example, giving some questions for each reading.

The overall feedback received from the students indicate three significant findings. First, students found value in the exhibition visits for both personal and professional development. They highlighted how much they enjoyed the visits, and at the same time realized that each exhibition contributed to their pedagogical practices. Second, building knowledge about the topic of the course through writing and research tasks and the museum visits was appreciated. As one student commented, they liked "[t]he parallel between theory and practice. It's not a usual thing in higher education". Such a comment indicates that the students expect guidance in developing their reflective practice. As some feedback shows, the fact that they were asked to write a review of the exhibition changed the way they observed it. The focus on active participation and interaction guided by concepts and analysis contributed to their learning and development. As one student remarked: "Seeing theory in real life is exciting." Finally, the teacher's attitude and the general atmosphere in the classroom also have an impact on how the students experience the course. Several students highlighted that the sincere and open communication among the participants contributed to the success of the course. In an environment where teacher trainees are treated as real professionals, they can truly start practicing the role of the reflective practitioner.

Discussion of pedagogical implications

Based on these findings, I present three pedagogical strategies that can contribute to developing students' reflective thinking and help them with demonstrating it successfully.

Pedagogical strategy to develop reflective practice 1: The genre pathway

The integration of writing tasks with different roles taken by students contributed to changing their perspectives and thinking about writing. First, they wrote recounts of personal experiences, but they were asked to gradually move towards taking the role of a teacher who observes exhibitions and multimodal texts informed by theoretical and pedagogical knowledge. The gradual shift from the student's own world through objective descriptions, scaffolded review writing, and finally the presentation task guided them towards more autonomy in their choice of topics but supported by more specialized knowledge. As the semantic gravity analysis of the writing and speaking tasks show, the assignments can be organized on a specific semantic wave, for example working towards stronger semantic gravity and less context-dependency.

Pedagogical strategy to develop reflective practice 2: Using the semantic wave as a pedagogical tool

The fact that a whole lesson was dedicated to the enactment of semantic gravity in writing practice contributed to the way the students approached writing their reviews. However, the students were reminded of semantic waves during the collaborative dialogues and analysis of educational materials in museums. During these dialogues, the teacher can stop and reflect on the students' comments, who can also give feedback on each other's observations. Challenging why and how students respond to experiences and texts can be eye-opening as long as it is carried out in a supporting learning environment where straightforward communication is motivating for the students. Inspired by the idea that reflective practice is not simply taught like disciplinary subjects, the understanding of the functions of semantic waves also needs to be approached all through a course in different situations and tasks. LCT Semantics can inform both teaching and assessment practices. The analysis of the reviews shows that providing feedback in the form of a visual scaffold like the semantic wave can give students more insights into how and what needs to be developed in their writing. Such explicit assessment demands explicit instructions and transparent expectations.

Pedagogical strategy to develop reflective practice 3: Working with experiences

Over the whole course, I focused on activating students' past experiences, creating shared ones, and inspiring them to observe their own new experiences from new, multimodal perspectives. Such an approach means accepting the relevance of personal experiences and recalling them in meaningful ways for pedagogical practice. By asking the students to write about memorable experiences, they were motivated to think about how they shape them and their future students. Apart from activating experiences, creating shared experiences is significant. The idea that "guidance through interaction in the context of shared experience" by Rothery (Martin 1999: 26) has a significant impact on students' development echoed in my ear during the course. Analyzing multimodal texts and visiting two exhibitions followed by collaborative dialogues created experiences that helped the students find immediate relevance of the new theoretical frameworks they studied during the course. Finally, the opportunity to choose and present their own research topics from a multimodal perspective at the end of the course guided students towards autonomous research practice. One of the most important lessons of the course is that field trips such as exhibition visits are great opportunities which create enough distance and new context for reflective practice.

Conclusion

This case study presented how explicit pedagogical practice and a rich, experience-filled learning environment can transform students' reflective practice in teacher education. The main guiding principle for this pedagogical practice was the LCT concept of semantic gravity, which shaped both the course design and the dialogic and writing assignments during the course. The benefits of different SFL-informed genre-based writing tasks were also demonstrated in this context as students were asked to write a variety of texts heading from recounts through descriptions and reviews towards the more complex knowledge-powered but experience-based multimodal presentations at the end of the course. The semantic gravity of the course scaffolded an arch that aimed at controlled reflective practice, appreciating the fact that reflection as a cognitive process embraces both the personal response to experiences and theoretical and methodological knowledge, which was based on social semiotic multimodality and exhibition experiences in this course. The enactment of semantic waves facilitated both pedagogical and assessment practices and guided students in forming their descriptive, analytical and reflective practice in the context of exhibition visits. An important aspect of recontextualizing semantic gravity for classroom lies in the power of visualization through semantic waves. The visual scaffold of a wave gives students a reference point and supports transferring the underlying idea that different knowledge practices come to life in different pedagogical tasks and these can be accessed easily through the concept of semantic waves. LCT-informed pedagogy and genre pedagogy thus contributed to a transparent, explicit and accessible approach to developing reflective practice in teacher education students.

References

AUT Literacy for Assessments. (2018, April 30). Reflective writing [Video]. YouTube. https://www.youtube.com/watch?v=P-NPNeNtr_8.

Blunden, Jennifer & Penelope Fitzgerald. 2019. Beyond the classroom: Museum visits and resources. In Helen de Silvia Joyce & Susan Feez (eds.), *Multimodality across classrooms: Learning about and through different modalities*, 194–206. New York & Oxon: Routledge.

Bolton, Gillie. 2010. *Reflective practice: Writing and professional development*. Sage.

Borg, Simon. 2003. Teacher cognition in language teaching: A review of research on what language teachers think, know, believe, and do. *Language Teaching* 36. 81–109.

Boryczko, Marcin. 2020. Critical thinking in social work education: A case study of knowledge practices in students' reflective writings using semantic gravity profiling. *Social Work Education*. 1–16.

Brooke, Mark. 2019. Using semantic gravity profiling to develop critical reflection. *Reflective Practice* 20(6). 808–821.

Calderhead, James. 1989. Reflective teaching and teacher education. *Teaching and Teacher Education* 5(1). 43–51.

Chen, Yuan-Shan & Shao-Wen Su (2011). A genre-based approach to teaching EFL summary writing. *ELT Journal* 66. 184–192.

Chick, Mike. 2015. The education of language teachers: Instruction or conversation? *ELT Journal* 69(3), 297–307.

Clark, Megan, David Ensminger, Colleen Incandela & Heidi Moisan. 2016. Reflections on museums as effective field sites for teacher candidates. *Journal of Museum Education* 41(4). 329–340.

Cruickshank, Donald R., John J. Kennedy, E. Jane Williams, John Holton, & Deborah E. Fay. 1981. Evaluation of reflective teaching outcomes. *Journal of Educational Research* 75(1). 26–31.

Dewey, John. 1933. *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston, MA: DC Heath.

Farkas, Kornél. 2019. Reflective templates in language teacher education: A pilot study on Hungarian and Turkish pre-service EFL teachers' beliefs. *Argumentum* 15. 201–212.

Gatbonton, Elizabeth. 2008. Looking beyond teachers' classroom behaviour: Novice and experienced ESL teachers' pedagogical knowledge. *Language Teaching Research* 12. 161–182.

Georgiou, Helen. 2016. Putting physics knowledge in the hot seat: The semantics of student understandings of thermodynamics. In Karl Maton, Susan Hood & Suellen Shay (eds.), *Knowledge-building: Educational studies in Legitimation Code Theory*, 176–192. London: Routledge.

Hatton, Neville & David Smith. 1995. Reflections in teacher education: Towards definition and implementation. *Teaching and Teacher Education* 11(1). 33–49.

Hyland, Ken. 2007. Genre pedagogy: Language, literacy and L2 writing instruction. *Journal of Second Language Writing* 16. 148–164.

Ingold, Richard & Daniel O'Sullivan. 2017. Riding the waves to academic success. *Modern English Teacher* 26(2). 39–43.

Kirk, Steve. 2018. *Enacting the curriculum in English for academic purposes: A Legitimation Code Theory analysis* [Unpublished doctoral dissertation]. Durham University.

Kress, Gunther & Theo van Leeuwen. 1996/2006. *Reading images: The grammar of visual design*. London & New York: Routledge.

Kress, Gunther. 2010. *Multimodality: A social semiotic approach to communication*. London & New York: Routledge.

Kucserka, Zsófia & Veronika Szabó. 2015. *Útmutató-javaslat az osztatlan tanárképzést lezáró portfólió elkészítéséhez*. Pécs: PTE.

Macnaught, Lucy. 2021. Demystifying reflective writing in teacher education with semantic gravity. In Christine Winberg, Sioux McKenna & Kirstin Wilmot (eds.), *Building knowledge in higher education: Enhancing teaching and learning with Legitimation Code Theory*, 19–36. Oxon & New York: Routledge.

Martin, James R. & Rose, David. 2008. *Genre relations: Mapping culture*. London: Equinox.

Martin, James R. 1999. Mentoring semogenesis: "Genre-based" literacy pedagogy. In Frances Christie (ed.), *Pedagogy and the shaping of consciousness: Linguistic and social processes*, 123–155. London: Cassell.

Maton, Karl. 2009. Cumulative and segmented learning: Exploring the role of curriculum structures in knowledge-building, *British Journal of Sociology of Education* 30 (1): 43–57.

Maton, Karl. 2013. Making semantic waves: A key to cumulative knowledge-building. *Linguistics and Education* 24(1). 8–22.

Maton, Karl. 2014. *Knowledge and knowers: Towards a realist sociology of education.* London: Routledge.

Maton, Karl. 2016. Legitimation Code Theory: Building knowledge about knowledge-building. In Karl Maton, Susan Hood & Suellen Shay (eds.), *Knowledge-building: Educational studies in Legitimation Code Theory*, 1–23. London: Routledge.

Maton, Karl. & Rainbow Tsai-Hung. Chen. 2016. LCT in qualitative research: Creating a translation device for studying constructivist pedagogy. In Karl Maton, Susan Hood & Suellen Shay (eds.), *Knowledge-building: Educational studies in Legitimation Code Theory*, 27–48. London: Routledge.

Maton, Karl. 2020. Semantic waves: Context, complexity and academic discourse. In James R. Martin, Karl Maton & Yaegan J. Doran (eds.), *Accessing academic discourse: Systemic Functional Linguistics and Legitimation Code Theory*, 59–86. London: Routledge.

Rose, David & James R. Martin. 2012. *Learning to write, reading to learn: Genre, knowledge and pedagogy in the Sydney school.* London: Equinox.

Rothery, Joan. 1994. *Exploring literacy in school English (Write it right resources for literacy and learning).* Sydney: Metropolitan East Disadvantaged Schools Program.

Ryan, Mary & Michael Ryan. 2013. Theorising a model for teaching and assessing reflective learning in higher education. *Higher Education Research and Development* 32(2). 207–223.

Saldana, Johnny. 2009. *The coding manual for qualitative researchers.* London: Sage.

Schön, Donald A. 1983. *The reflective practitioner: How professionals think in action.* London: Routledge.

SG Plotter Heroku App (n.d.) http://sg-plotter.herokuapp.com/form.

Sims, Sarah. 2018. Thinking about how we think: Promoting museum literacy skills with metacognition. *Journal of Museum Education* 43(4). 325–333.

Stevenson, Marie, Bronwyn James, Arlene Harvey, Minkang Kim & Eszter Szenes. 2018. Reflective writing: A transitional space between theory and practice. In Kristyan Spelman-Miller and Marie Stevenson (eds.), *Transitions in writing, studies in writing*, 264–299. Leiden: Brill.

Szenes, Eszter, Namala Tilakaratna & Karl Maton. 2015. The knowledge practices of critical thinking. In Martin Davies & Ronald Barnett (eds.), *The Palgrave handbook of critical thinking in higher education*, 573–591. New York: Palgrave Macmillan.

Szivák, Judit. 2014. *Reflektív elméletek, reflektív gyakorlatok.* Budapest: ELTE Eötvös Kiadó.

Tilakaratna, Namala. & Eszter Szenes. 2021. (Un)critical reflection: Uncovering disciplinary values in social work and business reflective writing assignments. In Christine Winberg, Sioux McKenna & Kirstin Wilmot (eds.), *Building knowledge in higher education: New directions in teaching and learning*, 105–125. London: Routledge.

Wells, Gordon. 2007. Semiotic mediation, dialogue and the construction of knowledge. *Human Development* 50(5). 244–247.

Westerman, Delores A. 1991. Expert and novice teacher decision making. *Journal of Teacher Education* 42. 292–305.

Yasuda, Sachiko. 2011. Genre-based tasks in foreign language writing: Developing writers' genre awareness, linguistic knowledge, and writing competence. *Journal of Second Language Writing* 20. 111–133.

Yasuda, Sachiko. 2015. Exploring changes in FL writers' meaning-making choices in summary writing: A systemic functional approach. *Journal of Second Language Writing* 27. 105–121.