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The learning portfolio as a tool for stimulating reflection by student teachers

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Summary

Chapter 1 forms the general introduction to the dissertation. In this chapter we describe the background to the study, the purpose, relevance, and context of the study, and the research questions. In teacher education great importance is attached to the stimulation of reflection on experiences by student teachers, so that student teachers are able to continue to learn after they have finished their training. It is impossible to prepare student teachers for all situations they may come up against and to equip them with all the necessary knowledge and skills. Furthermore, it is becoming more and more important that teachers be willing and have the ability to develop new knowledge and skills themselves, so that they can take advantage of new developments in education, raise their own actions for discussion, and continually improve their own teaching. Reflection is seen as a powerful tool enabling teachers to continue to develop in a structured way.

Different techniques are used in teacher education to stimulate reflection by student teachers. Recently, the portfolio also started to be used as an instrument for reflection. In response to changed views on teacher assessment and the professional development of teachers, new assessment methods have been developed that do justice to the complexity of teaching and learning to teach. These new assessment methods can offer insights into both the behaviour and the knowledge and conceptions of teachers, can contribute to the professional development of teachers, and fit into a constructivist view of learning. The portfolio is one of these relatively new assessment methods. Reflection on one's own thinking and performance is a central component in the learning portfolio. The main focus of this type of portfolio is student teachers' reflection on their learning process with a view to advancing professional development. Working on a learning portfolio should enable student teachers to concretize their learning process using information about their teaching practice and their course, and to think about their functioning in teaching practice in a structured way.

This study was needed because results from recent research into the portfolio as a tool for reflection indicate that student teachers are not automatically stimulated to reflect on their experiences as a result of working on a portfolio. In the portfolio literature it is mentioned more and more often that the quality and value of the portfolio as a tool for reflection should be brought up for debate. To allow debate on this it is necessary that the concept of reflection in relation to working on a portfolio be explained. Furthermore,

without clarification of this concept it is not possible to compare results from portfolio research. The aim of the study described in this dissertation was to describe the nature of reflection in the learning portfolios of student teachers. It was aimed at developing a description framework that can be used to explain the concept of reflection in relation to working on a portfolio and to contribute to a better insight into the operation of the learning portfolio.

We explored the use of the learning portfolio among 21 student teachers during their one-year postgraduate teacher-training course at Leiden University in the Netherlands. During the course of the year, the student teachers produced two learning portfolios dealing with what they felt to be important learning experiences in their teaching practice and in their university studies. The learning portfolio was used during the course as an instrument to encourage student teachers to reflect on themselves as beginning teachers, and to make them aware of how they were progressing in their professional development and of their own part in that. The self-chosen portfolio themes formed the core of the portfolio. In these themes, the student teachers reflected on their learning experiences, beliefs, learning points, and development. A theme is a subject that is or has been important in the development of a student teacher. It is a cover-all term that links different learning experiences. Examples of themes are interaction with pupils, oneself as a teacher, conversation skills in the senior years at secondary school, and motivating pupils.

The study can be characterized as a small-scale, qualitative, in-depth study. The general problem of the study was whether student teachers reflect in their learning portfolios and in what way. This general problem was divided into three research questions: (1) What is student teachers' understanding of working on a learning portfolio? (2) How do student teachers reflect in their portfolios? and (3) When and how do meaning-oriented learning activities manifest themselves in a portfolio theme?

In **Chapter 2** we report on the first research question, about student teachers' understanding of working on a learning portfolio. We concentrate on the functions of the learning portfolio in student teachers' learning process as perceived by the student teachers' themselves. To get a picture of how the portfolio functioned, we interviewed the student teachers about the value of making a portfolio for their learning process. The interviews were held at the end of the year of training and they dealt with the two portfolios that the student teachers had produced. We also analysed the portfolio-evaluation reports that the student teachers had written as a compulsory element of

their portfolios. In these reports they gave an account of their experiences of working on their portfolios and explicitly examined the value of the portfolio for their learning process. We examined different portfolio studies to find starting points for the content analysis of the interviews and the reports. In the portfolio literature two functions of the learning portfolio are generally distinguished: a product and a process function. Student teachers work on a learning portfolio not only to show what they have achieved and learned (the portfolio as product). The main purpose of the portfolio is to help them to work on their learning process (the portfolio as process). The process function of the portfolio is the dynamic side of the portfolio, because this is where the interplay between reflection on the learning process and the learning process itself originates.

To describe the process function of the portfolio we used the learning activities distinguished by Vermunt and Verloop (1999) for the content analysis. The development of the category system for the analysis of the interviews and reports was an iterative process going from theory to data and vice versa. We found five learning activities (recollecting, structuring, evaluating, analysing, and reflecting) which formed the base for the formulation of the portfolio functions. The content to which the (learning) activities referred was used to make a further distinction within the (learning) activities and to formulate portfolio functions.

Seven functions of the learning portfolio emerged from the analysis of the interviews with the student teachers and the portfolio-evaluation reports. Most of the student teachers considered the portfolio to serve several functions at the same time. We distinguished two product functions, where producing the portfolio was seen as working towards a tangible end product ('meeting the requirements' and 'showing others or yourself'); and five process functions, where the interplay between reflecting on the learning process and the learning process itself was the key ('recollecting and structuring experiences', 'evaluating development', 'understanding experiences', 'understanding the learning process', and 'understanding yourself as a teacher'). A further distinction was made within the process functions of the learning portfolio. Two subgroups of process functions of the portfolio were distinguished based on the type of learning they facilitated. Two functions, 'recollecting and structuring experiences' and 'evaluating development', were geared to action and improvement of action in teaching practice. Three functions, 'understanding experiences', 'understanding the learning process', and 'understanding yourself as a teacher', were geared to understanding underlying processes that can play a role in action in teaching practice and learning to teach.

All the student teachers who took part in the study, with one exception, saw the portfolio's process function mainly in terms of looking back on their performance in teaching practice over the past semester, and making explicit what they had done, what they knew, and what they could do compared with at the start of the semester. The process functions geared to understanding underlying processes that can play a role in action in teaching practice and learning to teach were mentioned less often. It is precisely with respect to these process functions that the portfolio has a bearing on the learning process that the student teachers have gone through, and starts a new learning process.

A homogeneity analysis was used to determine whether there were empirically based associations between the functions of the portfolio mentioned by the student teachers. The homogeneity analysis of correlations between the portfolio functions revealed that student teachers mentioned product and process functions of the learning portfolio at the same time. We noted that naming the product function 'meeting the requirements of the course' was associated with naming the process functions that are geared to action and improvement of action in teaching practice, but it was seldom if ever associated with naming the process functions that were geared to understanding the underlying processes that can play a role in action in teaching practice and learning to teach.

The results of this part of the study reveal that the student teachers mentioned the process function of the learning portfolio as a value of working on a portfolio, but they meant different things with the process function of the portfolio. The student teachers mentioned process functions in which the portfolio only has a bearing on their learning process and process functions in which the portfolio also influences their learning process and starts a new one. The latter process functions were mentioned less often by the student teachers, so they especially saw working on a portfolio as looking back on their development in the past period and attaching a value judgement to that. When teacher educators intend that working on a portfolio should start a learning process, they have to communicate clearly the process functions of the portfolio that are geared to that to the student teachers. Furthermore, it is important that student teachers are as much as possible intrinsically motivated to work on the portfolio and that they do not see working on a portfolio purely as a compulsory part of the course.

In **Chapter 3** we answer the second research question, on the nature of reflection in the portfolios. We describe how we searched for an

operationalisation of the concept of reflection in the literature. Reflection in the portfolio concerns the *process* of interpreting experiences during the production of the portfolio. This means that reflection in the portfolio should be conceived of as a mental process that takes place while a portfolio is being made. The literature on reflection offered us little assistance in describing this thought process. The lack of clarity in the literature on reflection about the thought processes that make up the reflection process led us to turn to the literature that specifically addresses thought processes and that was better suited to the nature of the portfolio data. Theory from educational psychology offered opportunities to distinguish and describe thought processes in terms of learning activities that student teachers undertake as they work on their portfolios. To develop the category system for the analysis of the 39 portfolios that were gathered in this study, we used the learning activities distinguished by Vermunt and Verloop (1999). The process of developing the system of categories was an iterative process between theory and data and vice versa. The final system of categories consisted of six learning activities: the cognitive learning activities, ‘analysis’, ‘recollection’, and ‘critical processing’; and the regulative learning activities, ‘diagnosis’, ‘evaluation’, and ‘reflection’. These learning activities were broken down into 34 subcategories (see Table 3.1).

‘Recollection’ was the learning activity that was found most frequently: it was found in each portfolio theme. A combination of ‘recollection’ and ‘evaluation’ was found in many portfolio themes. The student teachers described their experiences and activities (‘recollection’), and expressed a value judgement on their chosen approach, their development, or functioning, or gave an opinion about something (‘evaluation’). The learning activities ‘analysis’, ‘critical processing’, ‘diagnosis’, and ‘reflection’ emerged far less often from the portfolios. Almost all of the student teachers made a start on these, but to a much lesser extent than ‘recollection’ and ‘evaluation’.

The learning activities that we found in the portfolio themes differ in the types of learning they aim at: action and improvement of action in teaching practice, or understanding the underlying processes that can play a role in action in teaching practice. This distinction fits into a division used in research on how student teachers learn, between performance-oriented student teachers and meaning-oriented student teachers. ‘Recollection’ and ‘evaluation’ address immediate performance, and the improvement of performance, in teaching practice. We indicate these learning activities as action-oriented learning activities. The learning activities ‘analysis’, ‘critical processing’, ‘diagnosis’, and ‘reflection’ are oriented towards understanding

the underlying processes that can play a role in action in teaching practice. We indicate these learning activities as meaning-oriented learning activities.

From the portfolio analysis it appeared, furthermore, that the learning activities could be undertaken both in the present (during the production of the portfolio) and in the past (at an earlier stage in the learning process). In addition, a distinction could be made with regard to the period of time to which the learning activities related. All six learning activities could refer to separate experiences or related experiences over a period of time and different contexts. The student teachers discussed separate situations, events, or activities that took place at specific times, and they also made connections between experiences that were important to them and discussed these relationships in their portfolios.

The learning activities that emerged from the portfolio themes frequently followed each other in a particular, inter-related, sequence (see Figure 3.1). This pattern of learning activities could coincide with a theme, or several patterns could be found within one portfolio theme. The pattern of learning activities was confined, in most cases, to a description of separate or related situations, experiences, or activities, followed by an evaluation. In a small number of portfolio themes, a more elaborate pattern was found. In these cases, the description of the situation(s), experiences, or activities was followed by the learning activities 'analysis', 'critical processing', 'diagnosis', or 'reflection'.

The results of this part of the study show that mainly forms of the learning activities 'recollection' and 'evaluation' appeared in the portfolios of the student teachers. The student teachers seemed to have a tendency to focus mainly on their own practice and how to improve it. The learning activities that are oriented towards understanding processes that can play a role in action in teaching practice were found to a much lesser extent in the portfolios. Using the action-oriented learning activities 'recollection' and 'evaluation', student teachers selected the experiences that were important to them and they examined what they knew and were able to. These learning activities form a condition for starting a learning process. Processing of these experiences using the meaning-oriented learning activities 'analysis', 'critical processing', 'diagnosis', or 'reflection', however, rarely takes place. To realize that working on the portfolio starts a learning process, student teachers must go through an elaborate pattern of learning activities and the learning activities 'recollection' and 'evaluation' must be followed by meaning-oriented learning activities.

In **Chapter 4** we report on the third research question, on the manifestation of meaning-oriented learning activities in the portfolio themes. This part of the study followed the part of the study described in Chapter 3, into the learning activities that student teachers undertake as they work on their portfolios. In that part of the study we distinguished between action-oriented learning activities geared to the improvement of action in teaching practice and meaning-oriented learning activities geared to the understanding of underlying processes that can play a role in action in teaching practice. In this part of the study we focused on when and how the meaning-oriented learning activities manifest themselves in a portfolio theme. Meaning-oriented learning activities can be considered forms of deep-processing. They are directed towards making sense of experiences and are important for the construction and structuring of practical knowledge.

To be able to answer the third research question, we first analysed the content of all portfolio themes. We compared all portfolio themes and we classified the themes in clusters based on similarities and differences. Based on the portfolio analysis we distinguished six theme clusters, about problems experienced, the educational reform (*Studiehuis*), teaching and testing, activities other than teaching, oneself as a teacher, and development and functioning. Next, we determined in which portfolio themes there were meaning-oriented learning activities. We found meaning-oriented learning activities in 122 of the 310 portfolio themes. There were great differences between the student teachers in the number of themes with meaning-oriented learning activities. All but one of the student teachers, however, had one or more themes in the portfolio in which meaning-oriented learning activities occurred.

We found themes with meaning-oriented learning activities in four of the six theme clusters distinguished; in problems experienced, the educational reform, teaching and testing, and development and functioning. These four theme clusters seemed to relate to each other in the personal involvement of the student teachers with themes in these clusters.

The basic form of these portfolio themes was always composed of the action-oriented learning activities 'recollection' and 'evaluation'. The meaning-oriented learning activities generally played a small part next to these action-oriented learning activities in the portfolio themes. It is characteristic of meaning-oriented learning activities that they go into the 'why' of experiences. They form as it were a continuation, a depth, of the description of a situation, an approach, an opinion, or an evaluation of functioning or development.

The results of this part of the study show that meaning-oriented learning activities did not occur much and only in those portfolio themes in which the student teachers felt personally involved. Personal involvement should be stimulated as much as possible through the selection of portfolio themes.

In **Chapter 5** we report the main conclusions of the study. We discuss the concept of reflection and the operationalisation of reflection that we used in this study. By linking the reflection literature to the literature on how student teachers learn, we obtained a subtler picture of the process of reflection that working on a portfolio can start. The operationalisation in terms of learning activities offered us possibilities to describe the data and to do justice to the variation we found in that. Results from the content analyses of the portfolios showed that a distinction could be made between action-oriented and meaning-oriented learning activities. Undertaking action-oriented learning activities leads to *consciousness-raising* of what one knows and is able to do; undertaking meaning-oriented learning activities leads to *understanding* of experiences in teaching and learning. For the learning process of student teachers it is important that they undertake both action-oriented and meaning-oriented learning activities. The action-oriented learning activities (recollection and evaluation) that we found could be considered forms of selection of experiences. This selection of experiences is necessary for subsequent processing of these experiences. There was little evidence of processing of these experiences using meaning-oriented learning activities in the portfolios; without the processing of experiences there is no development of theories (of practical knowledge).

The limitations of the study are formed by the limitations of the method (content analysis) that was used and the small number of students that were involved in this study. It was only possible to describe the reflection in the portfolios that we saw in the portfolio themes. The description framework for reflection in the portfolio that was generated was based on the portfolios of a small number of student teachers, from one course year, and from one teacher education course. For this reason, our research findings cannot necessarily be generalised to other teacher education contexts. We did not examine factors that may have influenced the reflection we found in the portfolios.

Two topics were recommended for future research. Portfolio research should be related to research on how student teachers learn. Neither making a portfolio nor reflection is an aim in itself. The portfolio is an instrument that must contribute to the learning process of student teachers. Furthermore,

more empirical research into how student teachers learn and their learning environments is desirable. Much is still unclear and unknown. When more is known about how student teachers learn and what is desirable and achievable in the context of training teachers, instruments such as the portfolio can be used to achieve more specific aims and their value can be investigated in a more targeted manner.

Teacher education institutes should work out the purpose for which they aim to use the learning portfolio. The goal that students reflect on their development as teachers is not specific enough. Reflection encloses different learning activities. Most of the student teachers in this study saw the portfolio's process function as having a bearing on their learning process. The portfolios mainly showed the learning activities 'recollection' and 'evaluation'. Teacher education institutes should examine whether this is their purpose for the portfolio, in particular for reflection. When they aim for student teachers to undertake learning activities that lead to deep-processing, the development of practical knowledge, they must match the goal, use, and supervision of the portfolio to that.

