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Reflection in Teaching:
Can It Be Developmental? A Portfolio Perspective

By Nona Lyons

I just didn't realize that until that whole discovery.... I just didn't realise that until I did the portfolio.... Now it's a conscious decision.... That is what the process is about. It helps to bring things to cognition...through these conversations with people, it helps bring it to that part of your brain where you can realize that you know it and that it is important to you. (Teacher Intern)

In this paper I take up the issue of reflection in teaching and teacher education and the possible role of development in becoming a reflective practitioner. I consider these issues through the lens of a portfolio process that engages teacher apprentices as they put together a teaching portfolio to convince their mentors that they are indeed ready to take responsibility for a class of their own. This exploration with portfolios goes on in the context of widespread discussion about the place of reflection in teacher education and some recent, puzzling findings about how effectively reflection can be taught.

Here, reflective practice is defined preliminarily as ways in which teachers interrogate their teaching practices, asking questions about their effectiveness and about how they might be refined to meet the needs of students. The development of reflection is considered not simply as change, but as the evolution

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and integration of more complex ways (or processes) of engaging in a critical examination of one's teaching practices.

This paper begins with a context, looking at how reflection has been discussed in teacher education; it then presents data from a longitudinal study of ten teacher apprentices to examine the experience of becoming reflective through a portfolio process; finally, it identifies developmental elements of reflection. At a time of unprecedented use and excitement about portfolios, I offer some observations about reflection and an interpretive framework to uncover potential theoretical as well as practical implications of portfolios in teacher education (Graves, 1992; Lyons, in press).

Context

The idea of reflective practice as a goal for teacher education is not new. It can be traced to John Dewey (1933). But it had gained renewed currency in the 1980s through the work of Donald Schon (1983; 1987) and the school reform movement. Then reformers argued the case: if students were to be reflective, independent thinkers, there was a needed corollary—teachers who could interrogate their own practices for their effectiveness and join their students, not as tellers but as constructors of knowledge. Across North America, reflective practice became a goal of teacher education programs, of national teacher assessment initiatives, such as the work of the National Board for Professional Teaching Standards (NBPTS), and of the efforts of state education departments. The ability to engage in reflective practice became an important skill both new and experienced teachers needed to demonstrate. But, in the 1990s as reports of the efforts to educate teachers in reflective practice proliferated, a puzzle emerged.

Reflection was not uniformly achieved. Indeed, while some new and experienced teachers grasped the idea, it seemed to elude others. In 1995, The NBPTS reported results of the first round of portfolio reviews for Board certification. They revealed that experienced teachers found constructing a teaching portfolio one of the most profound reflective experiences of their careers. But simultaneously, the Board reported, experienced teachers had trouble making distinctions between description, analysis, and reflection (Baratz-Snowden, 1995). Similar findings are being reported by teacher educators.

This contradictory feedback raises compelling questions: What makes it possible for some teachers to engage in reflective practice while others are unable to do so? What—culture, epistemology, learning style—impacts on one's ability to demonstrate reflection? Can reflection be taught? How? And could it be developmental? That is, what role might development play in becoming a reflective practitioner? Finally, what meaning do teachers themselves make of their experience of learning to be reflective practitioners? How does that influence their teaching, their understanding of student learning?

A review of the research on reflection reveals that reflective practice is defined

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in a variety of ways and employed in teacher education programs with equal diversity (See Clarke, 1995; Fenstermacher, 1988; Grimmett, *et al*, 1990; LaBoskey, 1994; Yinger, 1990; and Zeichner & Liston, 1987). Most of these definitions have been influenced by the work of Dewey and/or Schon (1983; 1987;1991). Reflective thinking for Dewey is "deliberation," a kind of thinking close to scientific thinking (Dewey, 1933, p. 12). For Schon, thought is embodied in action. Reflective practice comes into play in thinking in action, calling up all previous knowledge to address the particular situation of practice. There can also be reflection on action, but, for Schon, reflection may not necessarily involve problem solving. Both Dewey and Schon view the world of practice as a "complex, unstable, uncertain, and conflictual" world. Inquiry into it must be carried on in it.

But in actual experiments teaching Schon's ideas, some refinements have emerged. For example, recently Anthony Clarke (1995) argues that mentors of teachers do not always act in quite the modal ways Schon describes. Attempting to translate Schon's model of coaching—one not taken from teaching—may not easily fit teaching. Most importantly, Clarke reports that reflection was not found in the course of a single incident or conversation, as the literature would suggest. Rather for student teachers reflection is born of incidents thematic in nature, occurring over long periods of time, "interwoven across multiple classroom and personal interaction contexts" (Clarke, 1995, p.259). As this work raises questions about appropriate practices for fostering the development of reflection, it seems critical to note two significant points in this research: (1) the focus on reflection occurring over time, through conversations rather than in a single incident and/or context; and (2) the focus on the student teachers and the meaning they make of reflection, of becoming a reflective practitioner.

It is within this context of exploring and elaborating ideas about reflection and how it changes over time that I turn to research I have been conducting at the University of Southern Maine. Because these data are limited to a small number of case studies, I recognize and caution that the observations being made must be considered preliminary ones, needing verification.

The Longitudinal Study

The study reported here involves three cohorts of students at the University of Southern Maine's Extended Teacher Education Program (ETEP): undergraduates preparing to enter the internship program; teacher interns, post-baccalaureate students, taking part in a year-long intensive, internship in learning to teach; and graduates of this program in their first or second years of teaching. Using data from ten case studies of students in these three settings who prepared teaching portfolios and talked about the process in open-ended interviews, I examine the meaning students give to their experiences of learning about and engaging in reflection through the portfolio assessment process and how that changes over time.

Instructions for constructing a portfolio usually suggest including the following: a statement of one's teaching philosophy or platform and a set of entries that are the evidence of one's competency in learning to teach. Each entry includes a description, a rationale for why it is included, and a reflection on what one learned about teaching and learning from the experience. Interns also consider the eleven ETEP program outcomes or standards as one guide to the kind of evidence they include in their portfolios, such as understanding child and adolescent development, or one's subject matter in order to reach all students—to name a few.

Four students, undergraduates, constructed and presented portfolios within the context of a "Portfolio Class," part of the admissions process into the ETEP internship year program. They were interviewed at that time and again during the following year. Six interns, identified by their mentors as either high reflectors or not-high reflectors, created portfolios over a five-month period of their internship year, coached by a Portfolio Team of former interns and university and school faculty. This portfolio was then presented to mentors and colleagues to cap the internship, providing closure to the year. It served as one determinant of certification for the interns. The interns were interviewed immediately after completing their portfolio presentations, and in the two years following. All of these interviews provide narrative reflections on the meaning students give to the portfolio process. I taught the undergraduate "Portfolio Class" and coached three of the interns as a member of their Portfolio Team. I conducted all the interviews. Data were analyzed both cross-sectionally and longitudinally for themes. It is these themes and elements of reflective development that I highlight here.

This analysis suggests four important hypotheses described below. In brief, this work points to a needed, expanded concept of reflection to include "making connections," long strands of connections about teaching and student learning that take place over time and in critical, collaborative conversations with others—not as a solitary, individual enterprise.

Observations Suggest Some Hypotheses

Data from the cohorts of these pilot studies reveal various responses on the part of the interns and undergraduates to the reflective portfolio process. But what first became apparent with the undergraduates of the Portfolio Class was that there were clear differences in the abilities of the students to engage in either written or oral reflections. This quickly became evident in the portfolio teams of teacher interns as well. Not all students could go beyond simple descriptions to engage in saying *why* they had included something in their portfolios, what it represented about their teaching, and what it was they had learned about teaching and learning from that experience. In response to the interview question, "Looking back at the portfolio experiences and presentation, what stands out for you?," a nearly universal response from undergraduates, interns, and graduates now teaching is "engaging in

reflection," "doing reflections." In nearly
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Four themes emerge from this pilot
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Observation #1:
That several elements and processes
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One important observation of this st
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reflection," "doing reflections." In nearly the same breadth most said, "It is hard." Some used the words "difficult," some called it "daunting." Other researchers have reported similar findings (See Freidus, 1996; LaBoskey, 1994, 1996).

In addition, when asked to write a statement of their teaching philosophies to be included in their portfolios, some teacher interns report being clearly dismayed by the scope of that task, some "nearly terrified" by it. Many believed that they did not have a teaching philosophy. Thus, at the start of their learning to teach, students are found with a variety of abilities and with greater or less success in engaging in reflection. But no matter how challenging, nearly all students in the end report the task of constructing a teaching portfolio an important and significant, reflective learning experience.

Four themes emerge from this pilot study that suggest hypotheses for future testing: (1) that several key elements and processes seem present from the simplest efforts at reflection but become elaborated over time; (2) that critical conversations interrogating portfolio entries and their significance provide a scaffold that fosters teacher consciousness of their knowledge of practice—such reflective interrogation can become a mechanism for continued teacher growth; (3) that the reflective process reveals over time significant aspects of one's teaching practice that become identified as part of one's teaching philosophy and emerge embedded in one's teaching practices; and (4) that the process of reflection that comes about through public, collaborative inquiry, paradoxically—and sometimes painfully, involves learning about the self, about the values one holds for teaching and learning. Each is discussed below.

Observation #1:
That several elements and processes of reflection seem present from the simplest, initial, or even the most difficult efforts at it.

One important observation of this study is that while the elements of reflective processes seem present from the start, they appear in some students in almost rudimentary, elemental form. They are, however, transformed over time. Some cross-sectional examples from the longitudinal study can clarify this process. I caution that this is a cross sectional view, not necessarily a developmental one, and that it is only one potential pattern.

"Challenged at times daunted reflectors." An undergraduate, Nadine, a science major applying for admission into the internship teacher education program, identifies the difficulties she encountered with reflection. Asked in an interview to say what stands out for her at the end of the portfolio process, she says:

> Amazed—coming up with all the reflections. That was challenging. It was difficult to think back [to the experiences represented by the entries] and just get it out. I can think of something to say, but it is harder to tell others what you are trying to say...having my thoughts be understandable to the reader. ...to have it have

> meaning.... That's one thing that is hard...talking about it, digging deeper into myself, into myself.... When you are trying to reflect back on experiences, you need to say things or express things in ways that you do not always do—[it's] not an everyday process that you have to say things or write things down—that's really personal, not something you would tell just anyone. That's really difficult.... It is not something you think about everyday. It takes time to think....

This undergraduate confronts the difficulties she finds in the reflecting but simultaneously identifies some of the elements of the reflective process: saying what you mean; digging deeper into yourself, and sharing the personal along with exactly what you mean. Continuing, Nadine also talks about an added element. A group of Nadine's classmates decided to meet outside of class in order to have a longer, uninterrupted period of time to share their work:

> A few of us met outside of class and looked at each other's portfolios and that helped. I really liked that I could see what they put into their portfolios. They could see what I was putting in and we helped each other, [by saying]: "You know this isn't clear to me. You need to let us know what you want us to know."

Here there appears for the first time a recognition of the importance of interrogation, the questioning by a critical friend. Several elements of reflection are revealed in Nadine's discussion: the idea of engaging in saying what you mean, in clarifying why you are including something in a portfolio; in revealing something about yourself; and, in doing that through inquires made in critical conversations. These all appear in almost stark relief.

A second piece of evidence about the elements of reflection comes from a young, teacher intern, Nicole, a woman who had also constructed a portfolio as an undergraduate but is now creating one as part of her internship year. Similarly finding the process of reflection difficult, Nicole identifies that selecting the entries she would include and justifying them can also be difficult.

> The selection process [is difficult] because anybody can fill up a scrapbook, so selecting things that are appropriate and relevant, I think are important and justifying those to others—which is the difficult thing for me to do because I know what I am trying to say, but someone else may not know, so I need to articulate that.

Nicole gives an example of an artifact, a tape of an interview with a student about what the student thought about a class. If she were to show that cassette tape to someone else, saying, "... this is important because it ...shows some learning going on there," she knows, "But I would be the only one who would know what learning went on there, you know.... Maybe the person wasn't there to see the lesson, ... doesn't know the student, and doesn't know the progress of the student." Nicole concludes with an ideal way out of her difficulty:

> So actually an ideal thing to put in a portfolio would be a student's portfolio, to show the growth and progress of a student from day one to...June or whatever. So

> a portfolio inside a portfolio would be

"But," she concludes "it would be huge. Ideal

Nicole knows that the portfolio h learning, and change over time for her justification of her entries are troubling. ' it. I couldn't tell you a pat thing, 'why.'. out. How can I adequately justify this, th wasn't in the experience, who wasn't in need to show someone else how to see i

When asked if there was anything process, Nicole identifies for the first tir linking reflection with justification. She

> The reflections were a big part...and the artifact and reflections, that's the key to everybody needs to develop, to write th Don't tell me, show me that something' artifact itself is not as important as the show my growth, what I learned from

Justification as reflection, talking to oth all important pieces of the experience. pieces, not connected ones/experiences. focusing on evidence that could convey students.

Observation #2:
That critical conversations interrogati provide a scaffold that fosters teacher This reflective interrogation can becor

"Natural reflectors." To provide cesses just discussed, I turn to two examp who became an intern, and another from now in her second year of teaching high identified by her university and school natural reflector.

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a portfolio inside a portfolio would be kind of a neat thing.

"But," she concludes "it would be huge. Ideally it would be great to do that for each student."

Nicole knows that the portfolio has the possibility to show development, learning, and change over time for her students as it could for herself. But the justification of her entries are troubling. "I don't know why it's so difficult to justify it. I couldn't tell you a pat thing, 'why.'....it is something I am still trying to figure out. How can I adequately justify this, this learning going on to someone else who wasn't in the experience, who wasn't in the environment? ...even though I see it, I need to show someone else how to see it."

When asked if there was anything else that stood out for her in the portfolio process, Nicole identifies for the first time "reflections." She then continues, now linking reflection with justification. She says:

> The reflections were a big part...and the reflection is part of the justification of the artifact and reflections, that's the key to the artifact. And so I think it's a craft that everybody needs to develop, to write the reflection.... It's kind of show, not tell. Don't tell me, show me that something's going on, so that's in the reflection....the artifact itself is not as important as the reflection....because the reflection would show my growth, what I learned from the experience....

Justification as reflection, talking to others in support of uncovering meaning, are all important pieces of the experience. But for Nicole they still are still isolated pieces, not connected ones/experiences. What Nicole does see is the significance of focusing on evidence that could convey something about her learning or that of her students.

Observation #2:
That critical conversations interrogating portfolio entries and their significance provide a scaffold that fosters teacher awareness of their knowledge of practice. This reflective interrogation can become a mechanism for continued growth.

"Natural reflectors." To provide a contrast to the emerging reflective processes just discussed, I turn to two examples, one from Cara, a former undergraduate who became an intern, and another from the longitudinal study of Martha, a teacher now in her second year of teaching high school English. Martha like Cara had been identified by her university and school mentors as a high reflector, or what I call a natural reflector.

I conducted a series of interviews with Martha over three years as she completed her internship and her portfolio and began full-time teaching. In this longitudinal data it is possible to see how Martha's ideas and reflections—her understandings of the reflective process and insights—were reexamined and refined over time. I turn to the first interview with Martha that took place in the spring of her internship year when she completed her teaching portfolio. In that first

interview Martha describes how the process of reflection first became apparent to her through the critical conversations of her Portfolio Team members. She says:

> I remember the most important things that I got (from the Portfolio Team) was that (Team members) could pull out these themes. I think that was the most important conversation and I think that was most of the conversation. Just looking at where things fit in and trying to find patterns or themes in all of the things that you are presenting or in all of the things you wanted to include in the portfolio. And it was hard to see it yourself, so that was key, the conversations (were) key, were critical in discovering what that was.

Martha continues:

> And that is what it is, the word that comes to mind—it is a process of discovery. I can remember having something I was presenting, presenting it and saying what I thought I had to say about it, having considered what I would say, saying it showing my artifact and having someone say, "Tell me more about that." about some aspect of it. And then I would go off talking about the artifact in some different way and discover some more meaning or an underlying meaning.

Martha gives an example: Describing how, in teaching of the *Scarlet Letter*, she had her students embroider a letter "A" and draw a scene from the novel.

> Everyone was assigned a scene from the novel and they had to draw it. And (in our Portfolio Team meeting)...I think I said something that I like to use art: and then someone said, "What do you think that says about you?" and then I remember getting to a place where I realized that it was more than having kids do art, I knew that there were kids whose main strength was art and I was trying to give kids a chance to succeed in the way that they could.
>
> And I remember...that was a moment of revelation for me. That I really was trying to play to the strengths of my students, to have everyone experience success in a unit. So I remember that it was through that conversation that came out. That it went deeper. It started at a level and then we had some questions and then it got deeper into what was at the core of my doing that. And it wasn't right there.... someone was there (saying): Look deeper.

Similarly, undergraduates report the power of conversation in promoting their processes of reflection. Cara, now an intern, looks back on her Portfolio Class discussions:

> It made me think about my purpose. [It] made me think: Dig deeper. Probe deeper. Look down. Where is the driving purpose? What is it that you want to do or accomplish? And it made me think of things at that level.... And I try to think of that as I go through this whole process [of learning to teach]...to continue to ask those "Why?" questions. Why am I doing this? and what purpose does it have? Is it useful? those why questions helped us to think that way.

Cara reports how this process stays with her: "When I prepare a lesson plan or am

asked to do something with the children the kids to get out of this? Why? ...And i give, then I go on with the plan. If I do question myself." Thus the reflective in process becomes a mechanism for contin intern.

Similarly, in the second year of h discovery of her use of art: she comes to r decision.

> Recently I was trying to teach reflec Hurston's *Their Eyes Were Watching G* money to buy the books. So I own the tap illustrate it by having them record a story again some kids who are not great write play and get them some recognition, g good at. So it is something that I recog
>
> ...that whole discovery as to the reason v that until the I did the portfolio: I use it to it's a conscious decision. Now it is a con a chance.

This understanding happens for Martha colleagues. That process brings to the su practice. Martha talks about this proces

> That is what the process is about: It help are talking about that there are things i yourself, and through these conversat cognition, it helps bring it to that part of know it and that it is important to you.

Thus the process of reflection—the inte tice—is facilitated through critical conv tice. And, says her friend, Sarah: "That

Observation #3:
That the process of reflection reveal edge—of teaching practice that beco philosophy and emerge embedded in

Recalling that original portfolio ex teaching remembers:

> The last things we did (in putting toge because we found that an impossible

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I got (from the Portfolio Team) was that
nes. I think that was the most important
the conversation. Just looking at where
themes in all of the things that you are
d to include in the portfolio. And it was
conversations (were) key, were critical

to mind—it is a process of discovery.
esenting, presenting it and saying what
onsidered what I would say, saying it
say, "Tell me more about that." about
off talking about the artifact in some
aning or an underlying meaning.

in teaching of the *Scarlet Letter*, she had
aw a scene from the novel.

vel and they had to draw it. And (in our
mething that I like to use art: and then
ays about you?" and then I remember
as more than having kids do art, I knew
was art and I was trying to give kids a
ld.

elation for me. That I really was trying
have everyone experience success in a
at conversation that came out. That it
we had some questions and then it got
oing that. And it wasn't right there....

er of conversation in promoting their
rn, looks back on her Portfolio Class

de me think: Dig deeper. Probe deeper.
e? What is it that you want to do or
gs at that level.... And I try to think of
learning to teach]...to continue to ask
his? and what purpose does it have? Is
think that way.

r: "When I prepare a lesson plan or am

asked to do something with the children, I constantly ask myself: What do I want the kids to get out of this? Why? ...And if I can feel comfortable with the answer I give, then I go on with the plan. If I don't, I will question my mentor teacher or question myself." Thus the reflective interrogation learned through the portfolio process becomes a mechanism for continued practice and continued growth of the intern.

Similarly, in the second year of her teaching, Martha, elaborates a second discovery of her use of art: she comes to realize how this practice is now a conscious decision.

> Recently I was trying to teach reflection. We were listening to Zora Neale Hurston's *Their Eyes Were Watching God* on tape because school does not have money to buy the books. So I own the tape.... We listened to it. And then I had them illustrate it by having them record a story from their life in a reflective voice. There again some kids who are not great writers made excellent tapes, that I could then play and get them some recognition, get them some applause for what they are good at. So it is something that I recognized through my portfolio.
>
> ...that whole discovery as to the reason why I was using it(art). I just didn't realize that until the I did the portfolio: I use it to give everyone their moment of glory and it's a conscious decision. Now it is a conscious decision to use art to give everyone a chance.

This understanding happens for Martha through the collaborative inquiry with her colleagues. That process brings to the surface her awareness and her knowledge of practice. Martha talks about this process in a larger sense:

> That is what the process is about: It helps to come to cognition. It's almost as if we are talking about that there are things in your subconscious that you know about yourself, and through these conversations with people, it helps bring it up to cognition, it helps bring it to that part of your brain where you can realize that you know it and that it is important to you.

Thus the process of reflection—the interrogation and examination of one's practice—is facilitated through critical conversations evoking the knowledge of practice. And, says her friend, Sarah: "That you are conscious of it."

Observation #3:
That the process of reflection reveals over time significant aspects—knowledge—of teaching practice that become identified as a part of one's teaching philosophy and emerge embedded in one's conscious practice.

Recalling that original portfolio experience, Martha in the second year of her teaching remembers:

> The last things we did (in putting together our portfolios) were our philosophies because we found that an impossible task when we had started working on our

> portfolios. We all felt we could write a trite (philosophy)—"this is what a-teacher-should-be-kind of philosophy"—if we had to. But I don't think any one of us had an idea of what our philosophies were when we started. But we did when we finished. It had emerged through dialogue, through the observations of other members of the Team. I know when I wrote my philosophy I felt terribly comfortable that I was speaking for myself. I wasn't writing down things other people had suggested, but certainly I was writing things other people had helped me realize through the process. And I still haven't changed that philosophy.

Martha presents several tenets of her philosophy: that each voice in her classroom has an equal chance of being heard; that she not dominate the class; that she be fair and consistent; but that, above all, she knows that she is a visual and verbal person and not every student is. She says: "I am very conscious of finding opportunities for students to show me what they know in ways that they are good at something, not having to be locked onto paper and pencil or keyboard and paper." Thus as her present students read Eli Wiesel's *Night*, she searches to find another medium in which they can express their varied strengths:

> ...for the final assignment they have to do an oral project,...they can write a poem or they can write a song, or they can write a letter to Eli Wiesel and ask him some questions. I give them six or seven options, and one little girl who struggles with writing and reading, I saw her face light up (when she heard the assignment)...

This practice, identified in the portfolio process nearly three years before is deeply embedded in Martha's practice and referenced by her as a critical part of her teaching philosophy.

Observation #4:
That the processes of reflection that come about through public, collaborative inquiry paradoxically involve at the center learning about self, about the values one holds for teaching and learning.

One difficulty students report in identifying their teaching philosophies is the seeming threat it can present. This may be so because it involves one's sense of self as a person and a teacher. In her first interview, Martha had talked about this, suggesting that some people are better at self disclosure. Others like herself are not: "I was taught you don't write about yourself...when you write there is no self-disclosure.... It's [also] risky. It's a risk to say: here I am on this page. This is what I believe about education...an employer could say, 'Oh, I don't want her if that's what she believes.'" And there is something else involved:

> I know that for us, for Sarah and Anna and me, it was coming to know who we were, coming to know what our philosophies about teaching were, all of this stuff coming to the surface about—Yah I do connect with students in special ways, I do you know, these various things are important to me, all the things that we came to realize, I mean it was a powerful experience...compiling the portfolio, it was very

> much a coming to know, and then an
> portfolio process...and the portfolio is a

Going on to discuss how she connects wit
in her mind and in her latest discussions

> ...but it is not the static portfolio, its the
> with other teachers. I know its the reflect
> I do with colleagues...we talk about tea
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	Emerging Ele
◆ What Reflection Is:	Telling others
◆ Purpose of Reflection:	Saying why: Justifying ent
◆ How the Self is Implicated:	Sharing perso experiences

much a coming to know, and then an experiential journey sort of through this portfolio process...and the portfolio is always there...

Going on to discuss how she connects with that today, Martha says how it continues in her mind and in her latest discussions with her current colleagues.

> ...but it is not the static portfolio, its the growing portfolio. I know its the dialogue with other teachers. I know its the reflection that I do on my own, the reflection that I do with colleagues...we talk about teaching and we talk about kids and we talk about and we reflect together—what do you think this means, and this is what happened today, how would you have done that...and I think some of those habits of mind come from the portfolio process. Some of those coming to know, I know this is good practice, I know soliciting student feedback is good practice, and that something I am going to make sure I do. I know that multiple intelligences are important to me and I am going to make sure when I plan units that I do those things.

Thus it appears that there are understandings of reflection that change over time. But the elements of reflection may be present from the earliest efforts at it. These become more elaborated over time. Figure 1 presents this view, indicating changing understandings of both what reflection is for and why and how one engages in it, and how the self is implicated. These changes may take place over long periods of time, from undergraduate experiences through to the first years of one's teaching. Collaborative conversations in which interns or teachers continue to question their practices emerge as the critical mechanism for reflective development.

Figure 1
Changing Understandings of Reflection in the Portfolio Process
(Pre-internship to First Years of Teaching)

	Emerging Elements:	*Elaborated Elements:*
◆ What Reflection Is:	Telling others	Engaging in critical collaborative conversations interrogating practice
◆ Purpose of Reflection:	Saying why: Justifying entries	Bringing to surface knowledge about teaching and learning; and,
◆ How the Self is Implicated:	Sharing personal experiences	Knowledge about self in relation to teaching: "Coming to know who we are, our philosophy, our connection to students, and "that we know that we know."

Reflection through the portfolio process presented here suggests a redefinition: Reflection in teaching is a process that takes place over long periods of time in which connections, long strands of connections, are made between one's values, purposes, and actions towards engaging students successfully in their own meaningful learning. Such understandings are constructed through conversations with colleagues as all interrogate their practices, asking why they are engaged in them and with what effectiveness. These critical interrogations serve to foster awareness and knowledge of practice and of oneself as a teacher.

Conclusion

The literature of teacher reform has identified a vision of successful teachers as integrating complex evidence of their students' learning, engaging in on-going critical reflection about their practices, and working as members of active learning communities (Moss, 1997). The teacher apprentices presented here by participating in a portfolio process are all engaged in this kind of learning, however different their starting points and the developmental paths they still must follow.

One troubling finding from this work, however, cautions how reflection is carried into the first years of teaching. Graduates of the teacher education programs consistently report that there is little formal support or opportunities for reflection in their school experiences. Some teacher educators are beginning to ask how they should be preparing students to deal with this reality. One hope is that, armed with their own experience and knowledge, portfolio makers will deliberately seek colleagues who will make reflection happen. Other teacher educators and some state education departments are working to embed on-going learning about reflection through follow-up beginning teacher seminars. Connecticut, for example, now has a mentor support system in place that emphasizes reflection. Still others are attempting to ensure reflection through new licensing mandates—such as the work of the Interstate New Teachers Assessment and Support Consortium (INTASC) and its league of some 31 states that are part of it (Miller, 1997).

But teacher educators need, too, to act, articulating and replicating the findings of their portfolio work such as the ones reported here. The clear differences in the beginning places of learning to be reflective are important to understand. The clear significance of engaging in critical conversations about one's teaching practice alerts us to its potential. The power of insistent practice in reflection, in identifying the why's, the purposes of one's practice revealed in portfolio entries is also useful in learning to be reflective. These practices can create habits of mind that foster continuing professional development. They do not require new monies. They can be implemented immediately. They should be, tried in exploratory ways. But the staying power of these habits of mind should also be examined in future longitudinal studies of portfolio makers, considering the powerful and still emerging possibilities of portfolios for fostering reflective practice.

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