<table>
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<td>Author(s)</td>
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UNDERSTANDING TEACHER IDENTITY THROUGH THE USE OF EPORTFOLIOS WITH PRE-SERVICE TEACHERS

Mingming Zhou, Stefanie Chye, Caroline Koh and Liu Woon Chia
National Institute of Education, Nanyang Technological University, Singapore
1 Nanyang Walk, Singapore 637616
mingming.zhou@nie.edu.sg

ABSTRACT

In this study, we shared findings from selected student teachers in National Institute of Education (a teacher education institution in Singapore) who have created eportfolios that presented their learning and teaching practicum experiences. The eportfolios were constructed with the aim to document their learning journey and teaching practices, and to reflect and showcase what they have achieved. Data were extracted from their eportfolio artifacts in order to seek evidence of their teacher identity formed during this process. The main research questions addressed in this paper were: "What type of teacher identity was reflected through pre-service teachers’ use of eportfolios?"; and "How their teacher identity developed in different contexts over time?" The paper concluded that student teachers’ identities evolved as they went through the teacher education program. Such identity constructions are never fixed, and develop under the influence of student teachers’ surrounding contexts and experiences.

KEYWORDS

teacher identity, teacher education, eportfolio, pre-service teachers, technology

1 INTRODUCTION

Traditional teacher education programs often offer a narrow instrumentalist approach that emphasizes the “how-to,” the “what works,” and the mastery of the “best” teaching methods [1]. In such programs, a message tends to be reinforced that teaching is about knowing a discrete body of knowledge that can be mastered [2]. As a consequence, prospective teachers in these programs will not be able to recognize or challenge their assumptions, “talk to their school experiences, consider alternatives, and contextualize theory within practice and practice” [3]. Another major concern with traditional teacher education programs is the fragmentation between content and pedagogical courses, and a theory-practice disconnection that does not link the knowledge and skills students learned in class to the “real world” of classroom teaching [4], [5], [6].

Based on these assumptions, we have developed an eportfolio practice for pre-service teachers to 1) reflect on their learning and teaching experience in and out of classrooms; 2) construct and refine their teaching philosophies; and 3) articulate their own experience, in light of professional competencies to be certified as teachers. In this paper we examined two questions: 1) What type of teacher identity in pre-service teachers was reflected through their use of eportfolios? and 2) How their teacher identities developed in different contexts over time? We first presented an overview of the implementation of eportfolios in teacher education, followed by the analysis of five student teachers’ eportfolios to track their identity construction and development. The paper was ended by in-depth discussions of the findings.

2 EPORTFOLIOS IN TEACHER EDUCATION

As [7] claims, “Electronic portfolios have a greater potential to alter higher education at its very core than any other technology application we’ve known thus far”. Since eportfolios were introduced into teacher education in the 1980s, educational researchers and practitioners have increasingly cited the use of portfolios as an important
assessment and learning tool in teacher education programs. In the domain of teacher education, the need to improve quality, attain established standards and to resolve accreditation issues have led to the increased use of eportfolios in many countries [8].

An eportfolio is often defined as a digitized collection of artifacts that represent an individual’s current status [9]. In pre-service teachers’ eportfolios, artifacts can be samples of work that include lesson plans, teaching materials, videos, images, classroom assignments, classroom tests, and so forth [10]. With the creation of eportfolios, student teachers can document their journey in becoming a teacher by selecting, sharing, and reflecting on artifacts such as teaching philosophies, classroom management plans, unit and lesson plans, and video clips of practice teaching [11]. They can not only showcase their best work as a professional, but also exhibit the knowledge and skills in using technology [12]. More than a mere collection of artifacts assembled for a specific purpose, an eportfolio also represents an attitude or belief or identity that the author intends to convey with the multiple sources of evidence collected over time.

One thing that features eportfolios is their potential to encourage deeper learning through the use of multi-media artifacts as richer forms of literacy to express understanding [13], [14]. The electronic medium for portfolio development offers an alternative venue to trace student development as a prospective teacher, present student teachers in a more live, dynamic and integrated way, by building on opportunities within traditional teacher education programs and therefore serving multiple purposes [5].

2 TEACHER IDENTITY

Crafting an identity as a beginning teacher often involves “trying on” a variety of ways of being a teacher. In studies of teacher identity, the term identity is conceptualized in multiple ways. We followed the lead of [15] who viewed it as something which is “not already ‘there’; rather, it is a production, emergent, in process. It is situational – it shifts from context to context”.

[16] noted that teacher identity “is of vital concern to teacher education; it is the basis for meaning making and decision-making. … Teacher education must begin, then, by exploring the teaching self”. From this perspective, it is essential to pay more attention to the personal part of teachers’ professional identity: what it feels like to be a teacher in today’s schools replete with rapid changes and increasing challenges, and how teachers cope with these changes and meet the challenges [17].

Eportfolios are being used successfully to develop pre-service teacher identity [18]. They provide student teachers with spaces to formulate, develop and shape their beliefs and thoughts about the teaching profession, and more importantly, what this profession means to themselves. In eportfolios, with the multimedia and online tools, student teachers can more effectively and efficiently construct their teacher identity in more live and richer formats. All these point to the fact that eportfolios in teacher education can work to support pre-service teachers’ growth and ability for self-reflection, and provide a context for ongoing discussions about the construction and negotiation of teacher identity [19].

3 PRESENT RESEARCH

Although extensive discussion has been ongoing about the use of the eportfolios for teaching and learning that speaks to the integration of new technologies and education of pre-service teachers [20], [21], thus far, eportfolios have not been sufficiently investigated with regards to how teacher identity can be formulated, negotiated and presented within digital text and media [19]. The current research would fill this gap.

This investigation took place at the National Institute of Education (NIE). NIE is the sole institution providing initial teacher training in Singapore. A developmental eportfolio practice was implemented for initial teacher education with the purposes of: (i) charting the learning and
personal growth of the student teacher through his/her experiences at NIE and developing his/her personal teaching philosophy over time; (ii) helping to bridge the theory-practice nexus and providing evidence for the theory-practice link in the student teacher’s learning and classroom teaching; and (iii) providing evidence of the attainment and integration of standards and competencies in teaching. Through the systematic collection of and reflection upon authentic and diverse evidence of a student teacher’s learning and achievement over the one-year at program, the pre-service teachers began to recognize and develop their identity as “teacher”. It is termed the “Learning and Teaching Portfolio” to make salient the continuum in its role in charting the development of a student teacher at NIE, his/her induction as a beginning teacher and his/her eventual professional development as a skillful teacher, such that the eportfolio can be presented to different audiences for specific purposes, such as to school leaders and NIE supervisors prior to practicum.

An eportfolio template was designed which contained five essential components: “my profile”, “teaching philosophy”, “learning journey”, “teaching practicum” and “Graduand Teacher Competencies (GTC) accomplishments”. The student teachers could further customize the template to better meet their needs and purposes. The free open source – Google Sites — was adopted for the eportfolio construction. Student teachers were allowed to use any online apps or tools to develop their eportfolios.

4 DATA COLLECTION AND METHODS OF ANALYSIS

4.1 Data collection

The research reported here is based on the analysis of eportfolios (artifacts) of five student teachers (3 males and 2 females) enrolled in the Postgraduate Diploma in Education (Junior College) track at NIE – a program for university graduates who are preparing to teach at the Junior College level. Based on the program timeline, student teachers embarked on their teaching practicum after they completed coursework at NIE. At the start of their study at NIE, the purposes of developing eportfolios were communicated clearly to all the student teachers. Thus, in their eportfolios, the section on “learning journey” was developed before the section of “teaching practicum”. This enabled us to compare and contrast the identities they attempted to project in different contexts, and outline the development trend of their identities over time.

4.2 Data analysis

In our analysis of the eportfolios, we moved beyond the examination of the organizational schemes of the eportfolios to a deeper exploration of how they operated as vehicles for student teachers’ identity construction and development. Systematically analyzed were ways student teachers used hypertexts and hypermedia as tools to demonstrate learning (inside and outside classrooms), as well as the connections between their eportfolio development and identity construction. The student teachers were hereafter referred to as (i) YZ; (ii) JY; (iii) JL; (iv) HF; and (v) PN.

Texts carry both an ideational function in that they constitute forms of knowledge and beliefs, and an interpersonal function in that they help to construct forms of self or identities [22]. These functions constitute discourse as a form of social practice and action [23]. Given that the eportfolios were mainly constructed with texts, we adopted discourse analytic approaches to classify individuals who were involved in their identity constriction. This approach has been used in many studies of identity, such as the masculine and feminine identities [24], racism and ethnic prejudice [25], and refugee [26]. From the perspective of discourse analysis, identity is considered to be an ongoing process accomplished through social interaction [27], [28]. This suggests that the social meaning of the identity is discursively generated, rather than inherent and internal to the person or object itself [29]. Such a constructivist view of identity implies that their relevance to social action can only be determined
within the context in which they are accomplished [30].

In our context, we examined the artifacts student teachers uploaded in different sections of eportfolios and how the eportfolios helped them construct meaning and identity. The different sections constituted different contexts for student teachers’ identity development. The student teachers’ identities were discursively generated as they experienced more in that particular context. The data analysis process unfolded in three stages. In the preliminary read, we read individual pieces of artifacts to gain a sense of the content and nature of the artifact, with particular attention paid to the characterization of the teacher identities they assumed. Second, by situating the artifacts in a particular setting (i.e., learning journey at NIE vs teaching practicum in schools), we were able to obtain an aggregate but situational account of one’s identity within each setting. Last, we attempted to examine the trajectory towards the identity development for richest portrayals of student teachers.

5 RESULTS AND DISCUSSIONS

The results were presented based on the themes (sections in eportfolios), followed by a comparison and contrast between themes and ended with a trajectory of the development of teacher identity.

5.1 Eportfolios: Learning journey

YZ always left with people an impression of a hard-working student. This was again corroborated by the huge number of artifacts uploaded in his eportfolio. When presenting his learning journey, he chose a linear approach by presenting the artifacts in the chronological order of taking the modules in the program, along with the course description, course outline, course materials (e.g., slides) and major assignment samples. HF took a quite similar approach by including the assignments she completed for each module, coupled with class photos. PN presented even less information by only including the course requirements without providing further evidence to showcase what she has learned. By reading their eportfolios, one can immediately obtain a clear picture of what modules they have taken, what those modules were about and what coursework they have completed. However, no further information could be gathered about their personal thoughts about this learning journey. In this sense, they all constructed a teacher identity merely as “information collector”.

Rather than following the chronological order of the coursework, JL decided to present his coursework with concept-maps. In his course overview map, he showed the overall picture of all the modules he has taken according to their domain. In the elaborative maps for each domain, he built connections among related modules with overlapping topics highlighted. Although the maps could be further improved to show how the interrelations among various modules worked together to contribute to his knowledge in teaching and to his future teaching career, his identity as “information organizer” was successfully established.

JY, in contrast with YZ and JL, presented himself as a highly reflective learner. He chose to narrate about what he learned in each course and reflect upon how each module nurtured his competencies, shaped his philosophy in education and defined his identity as a prospective teacher. As seen in one of his reflections about the module on pedagogical skills in teaching biology below, JY clearly delineated the type of teacher he desired to be:

“We teach in the way we learn best” is a quote from Dr Lee [the course instructor] which I felt exceptionally meaningful. Students have different learning styles; the manner I learn best in might not necessarily work for someone else. This drives me to be daring to experiment different strategies. I even secretly hope that I would one day become a Biology teacher who is creative in his teaching methods, of course, these teaching methods would somehow be developed from what I have been exposed to during this course. I believe learning does take place when there is laughter in class and I certainly hope to foster a classroom environment that is positive and conducive for learning. I hope not to change the
world, but to make a difference to those whom I crossed path with.

In another piece of his reflection below, he described how his ideas about group work changed as a result of taking that module:

_I realized that teaching and learning does not have to be just through a direct instructional approach. ... Initially I was quite apprehensive about group work as I hear a lot of horror stories from my friends who are currently teaching. Plentiful stories about students misbehaving during lessons and the classroom environment becomes chaotic during group work. ... However, after being explained the different factors that are crucial in making group work effective and having the platform and opportunity to try it out during microteaching was really a motivator to encourage me to include group work during my lessons to come._

The above quote showed that JY was trying hard to improve his knowledge and skills in being a good teacher by reflecting on his past and current experiences. The power of a portfolio lies in “its ability to become a tool for an individual to reflect on the real task of education — teaching.” [31]. As [32] argued, developing a reflective (e)portfolio will inevitably enlarge a teacher's view of what teaching is. Such reflections reinforce a view of teaching that is developmental in nature by considering teaching processes and teacher growth. JY’s critical and deep thinking about teaching established a clear and distinct identity as “learning trajectory” wherein the individual is willing to learn, review and make changes.

To summarize, the five student teachers established their identities in distinguishable ways when they started preparation for becoming a teacher. Three of them simply presented a collection of course information, while the other two presented themselves in a more cognitively mature and metacognitive manner.

### 5.2 Eportfolios: Teaching practicum

In the eportfolios for teaching practicum, the student teachers were expected to 1) apply what they learned at NIE to classroom teaching; 2) reflect on their teaching practices; and 3) showcase their great teaching moments (such as lesson plans, classroom activities). The examination of the five eportfolios showed that student teachers adopted different strategies to present themselves.

In YZ’s teaching practicum page, there were no personal accounts on whatsoever except for the description of teaching practicum. This seemed to be consistent with the identity he constructed in the learning setting. Yet one aspect that distinguished YZ from the rest participants was the inclusion of encouragement from his students. The thank-you cards, small gifts and encouraging words not only highlighted YZ’s popularity among his students but also reflected his another identity as “teaching with heart”.

HF chose to include the two presentations she made to the school staff during her practicum. In the slides she showed a variety of classroom activities she designed in her chemistry class. Although the static slides did not speak as loud as a live presentation, we could still see a teacher with a reservoir of pedagogy skills. Additionally, she was the only one of the five student teachers who sought to revisit her teaching philosophy she developed before the teaching practicum. This review process would enable one to contemplate on how he views knowing, teaching, learning: learning for now, learning for life, and learning across a life from the perspective of a “newish” teacher to an “established” teacher. In this sense, HF’s identity as a “reflective” teacher emerged from her eportfolio.

_To add on to my previous teaching philosophy, I think effective student learning is also about engaging students in the topic that they learn. Besides bringing in real-world-context and the use of ICT to engage students, teachers should be open in trying new and innovative ways to engage students. For instance, through games, class activities and group work. It may need the teacher to go out of her/his comfort zone, but no harm trying!_
PN was also quite reflective, but not seen as much in her teaching philosophy as in her reflective writing about her teaching practicum.

*Reflecting on my practicum, I'd learnt a lot more than this website can contain. ... This e-journal could help me to review and at peace with what I'd went through, what I'm going through and what is to come in my teaching career, or even share and guide my fellow co-workers who asked for my sharing (or even comfort) on particular areas - it may help me to get through tougher periods in my teaching career...*

Reflections as above revealed that PN considered her eportfolio as an “e-journal” which was a good outlet for constant review and update of her teaching experience. Besides, PN created a section named “my secret toolbox” to collect cartoons, videoclips and newspaper articles that she found useful for teaching. At this level, aside from her identity as a “reflective” teacher, her identity as “instrumentality” was also clear.

JL adopted a quite different strategy from other student teachers by “telling the teaching stories”. Along with the account of what he has achieved during the practicum, he presented them based on the competencies articulated by Graduand Teacher Competencies (GTC) framework adopted by NIE, such as cultivating knowledge, understanding the environment and developing others. This way of presenting himself left with the viewers an impression that he was quite clear about what was required of him as a beginning teacher, and by mapping out his teaching journey to this framework, he could better reflect on the gaps and take actions to improve. Hence JL constructed an identity as both “teaching trajectory” and “competency-oriented”.

JY also employed a reflective approach when presenting his teaching experience during the practicum. Different from HF and PN, he particularly reviewed the pedagogies he used for the teaching of biology. He reflected on what worked and what did not work. 

*I did try out collaborative learning (CoL) strategies; ... however, it did not work very well with the students. After speaking with the students ... many felt that they were unsure of the Biological concepts and some mentioned that they did not understand the question and hence, resulted in difficulty contributing meaningfully to CoL. This was rectified with more scaffolding which included doing a question/context analysis prior allocating students into groups to be engaged in their discussion.*

JY, in particular, mentioned about two model teachers he has worked with during the practicum. His self-reflective account of his interaction with them proved the assumption that knowledge is situated in the day-to-day lived experiences of teachers and best understood through critical reflection with others who share the same experience [33].

## 5.3 Teacher identity constructed in different contexts over time

The postmodern notion of identity recognized that “identity is not a fixed entity, but one that is dynamic and continuously constructed” [34]. As [35] argued, one’s identity is fairly flexible and pragmatic, which allows the individual to adapt to different situational contexts that arise concurrently or developmentally. A teacher’s identity is shaped and reshaped in interaction with others in a professional context [36]. As shown in Table 1, the student teachers in this study constructed different identities in different situations. In other words, their identities were co-constructed between the self and the environment. HF, PN, and JY became quite reflective when it came to presenting themselves as beginning teachers: HF reflected especially on her own teaching philosophy, PN reflected on her teaching practicum as a whole, whereas JY reflected particularly on his pedagogy. This nuance revealed that even within the same type of identity, the individuals could still focus on different aspects of self, which led to different interpretive frames for their identities. YZ stood out among this group of student teachers by showcasing the affirmation from his students. In short, their abilities to negotiate a fit between their identities and different
contexts demonstrated their awareness of the different roles they played in different settings.

### Table 1. Teacher identities across contexts over time

<table>
<thead>
<tr>
<th>Student Teacher</th>
<th>Learning</th>
<th>Teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>YZ</td>
<td>information collector</td>
<td>teaching with heart</td>
</tr>
<tr>
<td>JL</td>
<td>information organizer</td>
<td>teaching trajectory; competency-oriented</td>
</tr>
<tr>
<td>HF</td>
<td>information collector</td>
<td>reflective</td>
</tr>
<tr>
<td>PN</td>
<td>information collector</td>
<td>reflective; instrumentality</td>
</tr>
<tr>
<td>JY</td>
<td>learning trajectory</td>
<td>reflective</td>
</tr>
</tbody>
</table>

#### 6 CONCLUSION

In this study, pre-service teachers’ eportfolios were systematically analyzed to understand the multiple ways in which eportfolios provided student teachers with structures, tools, and opportunities for identity construction and development. Our results showed that the use of eportfolios did provide a lens to explore teacher identity and how it was shaped in the construction of the eportfolio. We highlighted consistencies and inconsistencies, compared and contrasted student teachers’ identities across contexts and examined the developmental trend of their identities.

Analysis of student teachers’ eportfolios suggested that the identity evolves as prospective teachers go through the teacher education program. This could be mediated by their own experience in university as learners and in schools as teachers, as well as their own beliefs and values about what it means to be a teacher and the type of teacher they aspire to be. The shaping and reshaping of professional identity occurs under the influence of teachers’ surrounding context – the institution, colleagues, school administrators, students and the wider school community. By providing them an effective tool to document, present, and review their identity (such as eportfolios), we then can incorporate our knowledge about the contexts and their influence on the shaping of teacher identities into our teacher education programs to prepare pre-service teachers for the challenges of developing strong and positive professional identities [36].

#### 7 REFERENCES


