Assessing First Year Pre-Service Teachers' Written Comments on Technology and Inclusion in Education

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Abstract

This paper examines the written reflections of a class of 20 young pre-service teachers to assess their preliminary views on technology and inclusion in education. As a record of a beginning experience, the reflections provide a lens on the unexplored area of local pre-service teachers' expectations and beliefs about teaching and learning. Accordingly, through the application of significance analysis to the language of the analytical component of the reflections, this study attempts to answer the following question: What perspectives on technology and inclusion in education are conveyed by the language of the written field observation reports of a class of young, first-year pre-service teachers in Trinidad and Tobago? The findings reveal that technology and inclusion in education are topics of concern for the young pre-service teachers who comment on the topics with language that is more subjective than technical, notwithstanding their status as digital natives. In this paper, "technology" refers to modern tools for teaching and learning such as the computer and digital video, while "inclusion" refers to the specific strategies and practices used by the teacher in the classroom to promote/demonstrate the education for all policy as outlined by the United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2009)[1].

Keywords: *reflections; pre-service; first year; field observations; primary school; technology; inclusion.*

1. Introduction

Trinidad and Tobago (TT) is a multi-ethnic, multi-cultural twin-island republic of 1.3 million people and the most southerly island of the Caribbean archipelago. An independent nation since 31st August 1962, its teacher certification system was changed in 2006 from its long-standing two-year in-service Teachers' Diploma programme to a four-year pre-service Bachelor of Education (B.Ed) degree programme as conducted through the local university. The degree is available to both full-time and part time students, the latter including primary school teachers who already possess a Teachers' Diploma but are seeking to acquire a first degree in Education. In terms of the full time aspect, the B. Ed programme enables prospective teachers to begin their formal teacher education immediately after their successful completion of secondary school studies. Consequently, the programme attracts a sizeable number of young secondary school graduates who desire to become teaching professionals and therefore opt to begin their formal preparation for the profession immediately after their graduation. The reflective reports that are the focus of this study originate from one such class of first-year students reading for the B.Ed in the four-year pre-service teacher education programme at the University of Trinidad and Tobago (UTT). When the reports were submitted for summative assessment in April 2011, the age range of the full time class of pre-service teachers was between 17 and 20. In other words, it was a class of "digital natives" – "native speakers" of the digital language of computers, video games and the internet" as asserted by Prensky 2001 [2]. If technology is impacting how students think about learning [3], and the students in this study are digital natives, then in the mind of this author, such impact should be discernible from how the pre-service teachers treat with technology in their field observation reports. Additionally, if education for all is the fundamental aim of the country's education system and the pre-service teachers are introduced to inclusion in education through a first-year course entitled "Survey of Exceptionalities," then inclusion should be a likely topic of focus in the field observation reflective reports of the first-year pre-service teachers.

2. Background

The Reports under scrutiny in this study were individually prepared by each of the twenty students who completed the required number of field visits and attended the required number of classes as scheduled for the Practicum. The structure of the report consisted of three (3)

components – observation, analysis, and personal evaluation. Observation details were to relate to several contexts, namely, physical / historical / cultural; human resource; programme; interaction and communication. The analytical component requires the student to focus on the strengths, weaknesses, opportunities and threats of the school. In the personal evaluation, students were expected to state reasons for choosing the school and to articulate the philosophy and/or educational theory that support their choice.

Summative assessment of the reports focuses on five elements: overall presentation, language competence, observation details, analysis, and personal evaluation. Students are apprised of these criteria by way of an explanatory rubric that is included with the Practicum course outline. However, the course outline does not explicitly direct the students' attention to inclusion in the field observation, although learning to plan for diverse learners is one of the stated goals of the Practicum. Similarly, while the outline recommends photographs and video recordings, inter alia, as strategies for the collection of observed data during the field visits, the manner and extent of usage of such data is not specified, nor is there any statement that attention should be given to technology/technological resources. However, if writing reflections "should help student teachers organize their thoughts and develop awareness and conscious decision-making of ongoing teaching and learning situations" [4], then it is not unreasonable to expect the pre-service teachers' reflections to provide evidence of engagement with issues such as the usage of technological resources and the practice of inclusion in teaching and learning. In that regard, the findings of Clarke (2007) are noteworthy: in his study of the instructional use of computer technology (CT) by five pre-service secondary mathematics teachers in the Caribbean, Clarke found that the teachers "did not have attitudes of skepticism or fear toward CT integration in their mathematics classrooms" and that "a positive attitude towards technology" resulted from the teachers having been "students with a computer option in their development" [5].

3. Context

In 2005, the Ministry of Education (MoE) in TnT produced a draft policy document for Information and Communication technology (ICT) in the island. The policy was informed not only by the MoE's mission to be "a pacesetter in the holistic development of the individual" [6] but also by the MoE's philosophy of education for all as expressed in the White Paper in Education 1993-2003. According to the philosophy, every child in TnT has "an inherent right to an education which will enhance the development of maximum capability regardless of gender, ethnic, economic, social or religious background."[7] It further states that this "right to education pertains to all children regardless of location, physical or mental ability." [7] Thus, inclusion and inclusive education are established educational principles in TnT, a specific link with ICT being made in section 8.2 of the aforementioned policy document with the declaration that "ICT shall be used to promote individualized learning in order to reduce disparities in educational development and performance." [6]

"Understanding Whole School and Classroom Dynamics" is the title of the Practicum for which the reflective reports were submitted. The Practicum requires three field observation visits of one day each, spread over a three-week period. Classroom sessions occur in between visits to facilitate discussion of observation experiences from both a comparative and theoretical perspective. However, all students are not placed in the same school. Rather, placement depends on the size of the particular practicum class and on the availability of cooperating teachers in any particular school. Thus, the class of twenty(20) was spread over four separate schools for the field observation visits which occurred in weeks four, six, and seven of the course schedule as shown in Table 1.

Table 1. Field visit schedule

Week	1	2	3	4	5
Activity	Class	Class	Class	Field visit	Class

Week	6	7	8	9	10
Activity	Field visit	Field visit	Class	Class	Class

This author was the practicum advisor for the class and visited each group in the field, thereby gaining independent first-hand knowledge of the location of the schools, their ambience and ethos, their staff and students. The visits also enabled verification of the presence of the pre-service teachers at the assigned school so that any misrepresentation or fabrication in the reporting would have been easily detected. Moreover, the visits are prescribed in the course outline which stipulates that Practicum Advisors should also visit prospective teachers in the field and provide ongoing support, counseling and feedback to prospective teachers during their field experiences [8].

After completing the field visits in week seven of the semester, each student was required to submit a reflective field observation report in week nine, followed by a group in-class oral presentation in week ten. This latter activity allowed students to collaborate on their unique experiences of the field visits seeing that no two students were ever in the same class at the same time. Accordingly, while the oral report enabled students groups to construct a succinct, coherent view of the group's visits, the individually written report allowed for deeper engagement and ownership of issues that were of personal significance (Francis 1995) [9].

Consequently, the articulation of the observation details was as varied as it was subjective with a combination of media being utilized. For example, one student recounted that at "*the earliest view of the school, [she] saw a very small and long building, a large savannah and a small contingent of students*." Another student in the same group placed a digital photograph of the same school at the beginning of her report and then described the school in the accompanying text as "*a one-storey structure that is partially made of wood and concrete material with a solid wooden floor*." She also labeled the school "*a rural primary school situated in the center of a quiet village*" and referenced the statement to an appendix which displayed a Google map of the village.

These nuanced differences made reading the reports as thought-provoking as they were informative. They brought to mind issues about diversity in its multiple perspectives as they appear in educational research literature, for example Dancy, 2010 [10]; Garmon, 2004 [11]; Weisman & Garza, 2002 [12], and teacher preparation for inclusive practice, (Hamre & Oyler, 2004) [13]. They also made the author wonder about the assumptions, beliefs and worldviews that local pre-service teachers bring to what has been labelled their "apprenticeships of observation" given that they are digital natives and also products of the local education system. These ruminations generated the question that informs this article.

3.1. Research Question

What perspectives on technology and inclusion are conveyed by the language of the field observation reports written by a class of young pre-service teachers in Trinidad and Tobago?

3.2. Limitations

Although the field observation reports were read in their entirety for summative assessment by this author, the focus for this article is only on the 'Analytical' component of the field observation reports. This approach was utilized because of the wide scope of the component in requiring focus, inter alia, on the strengths and weaknesses of the school. Additionally, upon first reading the reports for assessment, the author was touched by the explicit, emotive and persuasive rhetoric that students used in the component, a circumstance that unwittingly justified the proposed methodology. Moreover, the description of the component as "analytical" compelled the students to discuss and justify their points with completeness. For example, the following quotes from two students in the same group show how one described the strength of the location of the school where she was placed for the field observation visit, while another in the same school pinpointed the spacious classrooms:

The school is located close to the village which makes it easy for the students to walk from home to school and to return home in the evenings. It is in the central part of Penal Quinam, away from the noise of the busy streets, which decreases distractions for the students. Without the noise of cars passing, they can concentrate more.

The classroom is spacious and organized. The teacher can easily move around the classroom. Students can quickly and easily locate their books on the desk and their stationery at the back of the class. Also, because the teachers set the example by having their classroom organized, they help the students learn and understand the importance of being organized.

Another student from a different group also identified the strength of the location but for a totally different reason. According to that student's reflection, the "*location of the school is at the top of a hill where there is natural scenery. This view helps the children to relax and they concentrate on their studies better*."

These perspectives make the process of significance analysis appropriate for answering the research question because the analysis is concerned with "expressive dynamics, diversity, and individuality in meaning making" [14]. In other words, while the aforementioned quotes are ostensibly about one school's location and another's spacious classrooms, the strategic usage of such as qualifiers, intensifiers, and causal connectors in the writing signals the importance of the idea for the individual writer. This recognition underlies the application of significance analysis to the pre-service teachers' written comments on technology and inclusion in their field observation reports.

3.3. Data analysis

Using the process of significance analysis as outlined by Daiute (2012a), the analytical

component of the reports were first read closely by this author for specific comments on technology and inclusion. The placement and length of the comments within the component were noted as indicators of the importance of the subject for the student. Other notables were whether the comment was highlighted as a strength and/or weakness, whether it was supported with a visual, and whether a connection was made with teaching/learning. The full remarks on technology and/or inclusion were then evaluated / rated as thorough (3), moderate (2), or thin (1) and summarized for each group of reports. For instance, with respect to technology, the opening remarks quoted below from one student's "Strengths of the school" section earned the individual a value of 3 in the computation of the group's aggregate. Its evaluation was "thorough," visual support being two digital photographs: one showing the door to the computer lab with the signs "Welcome to the Computer Room" and "Kindly knock before entering. Thank You"; the other showing the interior of the computer lab - there are three desktop units and charts on the wall. Here is the student's verbatim comment:

> *Firstly, one strength of the school is that students have access to technology since they have a computer lab. This means that even though the school is in a rural area and has a small enrollment, the students in the school are not left behind. Technology is a very important factor of the future and presently, one cannot obtain a job without being literate in the computer. Therefore, computer classes and training for the students are necessary for their development into our future leaders. Since the school has a computer lab, teachers will be able to help the students achieve this.*

The following is also an example of a 'thorough' remark related to inclusion that one of the pre-service teachers highlighted as a weakness for the school to which she was assigned:

> *In the school, there is a child who has a learning disability and claims to be monitored by the Student Support Services. However, I observed that this student was totally ignored by the teacher in the classroom and left to do whatever she wanted for the entire day. It is the responsibility of the school to provide a wide range of learning experiences for students with learning difficulties suitable for their age and development. She should be provided with opportunities to acquire, develop, practice, apply and extend her skills in a range of contexts across the curriculum. These skills will also be relevant to life and learning outside and beyond the school.*

By contrast, some "thin" remarks were the following as related to technology and inclusion respectively:

> *The school also has a well equipped computer lab. This shows that the students and teachers are exposed to technology, keeping up with the modern world of computers.*

> *One child has a learning disability and is being monitored by the Student Support Services.*

The tables below summarize the distribution of ratings and identify the number of comments that were made on technology and inclusion in the reports. Table 1a – Distribution of Ratings - shows that half of the students found it worthwhile to comment on technology in their reflections (10/20=50%) and less than one-quarter on inclusion (4/20=20%). Table 1b – Summary of Ratings - shows that the average rating per comment was 1.5 and thus generally "thin" – see Table 1c – Summary of Quality Ratings.

Table 1a. Distribution of Group Ratings

Analytical Component	Technology ratings: maximum=3 per report	Inclusion ratings: maximum=3 per report
Group of 6	3,1,2,0,0,1=7	0,0,3,0,1,0=4
Group of 3	0,1,0=1	0,0,0,=0
Group of 5	0,0,2,0,0=2	0,0,2,0,0=2
Group of 6	2,0,1,1,1,0=5	0,0,0,1,0,0=1
Total ratings:	15 / 60	7/60
# of comments	10 / 20=50%	4 /20=20%

Note: 0 = no comment was made

Table 1b. Summary of Group Ratings

Analytical Component	Technology rating aggregate	Inclusion rating aggregate
Group of 6	7/18	4/18
Group of 3	1/9	0/9
Group of 5	2/15	2/15
Group 6	5/18	1/18

Total ratings achieved	15/60 = 25%	7/60 = 12%
Average rating	15/10 = 1.5	7/4=1.75

Table 1c. Summary of Quality ratings

Quality rating	Number of Comments re Technology	Number of Comments re Inclusion	Total number of Comments
Thorough =3	1	1	2
Moderate = 2	3	1	4
Thin = 1	6	2	8
Totals	10	4	14

The next step in the significance analysis was to recognize the evaluative devices in the students' comments pertaining to technology and/or inclusion in education and then create a classification grid to record the occurrences of the devices. This process was necessary because differences in the way an individual narrator and/or groups of narrators use evaluative devices across activities and time patterns indicate how they are connecting with the issue and the context [14]. For this study, the pattern was developed across the four groups and the chief devices focused on were categorized as affective, cognitive, intensifiers, qualifiers and negations (Tables 2a and 2b). These were chosen because of their perceived prevalence in the comments and also because they are integral to the speech pattern in Trinidad and Tobago. For example, the usage of the affective "[s]adly" in the following comment is found by the author to betray the student's recognition of and empathy with both the socioeconomic and educational implications of the situation. Moreover, it conveys that the availability of technology/technological resources is a significant issue for this pre-service teacher.

> *Pupils have computer classes weekly; they learn the basics of using a computer, the parts of a computer and they are allowed to get familiar with the keyboard. Sadly, many students are not privileged to have open access to a computer at home; the classes in school alleviate this situation.*

Similarly, with qualifiers and negation, the same writer conveyed that inclusion is a significant concern for her:

> *There is a special needs student enrolled in the school. She is a sweet child in the wrong place. The principal might mean well, but the unfortunate story is that the student is not taught using the methods best suited for her.*

However, the reporting on inclusion was generally by way of expletive sentences as in the following:

> *From my observation in the first year class, there were two children who were four years old and haven't been to kindergarten. No child is left behind so there is a remedial class for students of Standard Three.*

Table 2a. Devices re Technology

Devices	Reports-group of 6	Reports-group of 3	Reports-group of 5	Reports-group of 6
Affective	2	0	1	1
Cognitive	3	1	2	3
Intensifier	2	1	1	2
Qualifier	3	2	2	2
Negation	2	1	0	1
Total	12	5	6	9

Table 2b. Devices re Inclusion

Evaluative Devices	Group of 6	Group of 3	Group of 5	Group of 6
Affective	2	0	1	3
Cognitive	0	0	2	1
Intensifier	0	0	0	2
Qualifier	3	0	2	2
Negation	1	0	1	0
Total	6	0	6	8

Table 3. Summary of devices

Devices	Technology	Inclusion	Total
Affective	4	6	10
Cognitive	9	3	12
Intensifier	6	2	8

Qualifier	9	7	16
Negation	4	2	6
Total	32	20	52
#of comments	10	4	14

4. Discussion

The summary shown above in Table 3 highlights technology as having the greatest cluster of devices (32), particularly in terms of qualifiers (16), cognitives (12) and affectives (10). This combination reflects the highly subjective nature of the comments. It also suggests that the topic was of great concern for the pre-service teachers who resorted to suggestive descriptions to convey the impressions being received through observation. The average rating for the comments as shown in Table 1c above - see Section 3.2 - reveals that the remarks were largely "thin," meaning that there was a lack of depth and scope in the comments. This was further corroborated by an examination of the placement of the comments on technology and inclusion within the "Strengths" and "Weaknesses" structure of the analytical component of the reports.

Table 4. "Strengths"/"Weaknesses" Summary

Place of Comment	Comments on Technology	Comments on Inclusion	Total Comments
Strength	4	1	5
Weakness	0	3	3
Strength and Weakness	6	0	6
Totals	10	4	14

As shown in Table 4 above, the examination revealed that among the 10 comments on technology, 4 were identified as "strengths" only while 6 were highlighted as both "strengths" and "weaknesses." It was also noted that these comments were placed in the mid section of the particular descriptive category in the reports. For example, in "Strengths," the comments were preceded by remarks on location, discipline and teaching styles, while in "Weaknesses," the comments were preceded by remarks on absenteeism and inadequate space. Furthermore, it was noted that for "Strengths," the comments related to the fact that there was a computer lab at the school and for "Weaknesses," the comments related to Internet unavailability. Moreover, 8 of the 10 comments on technology were accompanied by a photograph of the computer lab, albeit without any students in attendance. Rather, the emphasis seemed to be solely on documenting the fact that there was a lab but not necessarily on its function in the teaching/learning dynamics of the school.

Thus, it was noted that only 3 of the 10 comments on technology made a direct connection with teaching and learning. Apart from those 3 comments, all others on technology were limited to either the presence of a computer lab in the school or the fact that the primary school students were being provided with computer skills. To quote from one such report,

> *Students have a class that allows them to go to the computer room and learn the foundation, basic skills needed in order for them to use the computer and type documents.*

The implication of that comment is not only that the computer lab will serve the primary school student's needs but also that the teacher will have the necessary skills to address those needs. However, teachers' usage of instructional technology was not considered in the reflection.

With reference to inclusion in education, its contextualization in the comments was mainly in regard to the school's lack of appropriate instructional resources for students with disabilities. Such thinking accords with the expectation of the Caribbean Community (CARICOM) Secretariat relative to the future of education and training in the region. Its hope for the future as expressed in "Creative and Productive Citizens for the Twenty-First Century" (2011), entails, inter alia, two inclusive proposals: "the introduction of a system which is gender sensitive in its focus and practice to ensure the full participation and development of both sexes" and "the introduction of a system sensitive to the special needs of learners, which aims to remove physical, mental and financial barriers and which provides an enabling environment and necessary support to such persons to fully participate and succeed in the system"[15].

5. Conclusion

While half of the pre-service teachers' reflective field observation reports display some expectation of technology in the Trinidad and Tobago primary school, the attention to it is found to be more personal than pedagogical. The subjectivity is evidenced by the affective expression of the remarks related to the school having a computer lab

rather than how the lab is being utilized as a teaching and learning resource. In other words, a connection is not being made with either the lab's instructional purpose or its inclusive dimension [16]. Hence, it seems that the pre-service teachers are approaching their field work with a limited view of technological capability in the primary school environment of Trinidad and Tobago, notwithstanding their status as digital natives. Moreover, this pre-conditioned view is neither recognized nor taken into account when the pre-service teachers begin their teacher preparation program. In fact, the 50% who did not make any comment at all about technology serve as a reminder that while the class may have a certain confidence in their technological skills and understanding as digital natives, they still lack experience and expertise in instructional/ educational technology.

With regard to inclusion in education, the extremely low level of response to it in the reports - (20%) - is not surprising. This is so because of the pre-service teachers' exposure during their beginning semester to only one course that would have introduced them to inclusion as a pedagogical concept. However, given the "thin" quality of the comments in the field observation reports, it can be argued that the pre-service teachers had insufficient time to understand properly the range and scope of inclusiveness before embarking on the field visits in the second semester. This inadequacy would have also inhibited the pre-service teachers' capacity to make insightful connections between technology usage in education and inclusive teaching, notwithstanding the fact that there were four comments on inclusion (refer to Table 4 above).

Overall, the analysis of the pre-service teachers' comments on technology and inclusion reveals the limitations that young, first-year pre-service teachers experience when they have to write their observations about technology and inclusion in education. It shows that without specific knowledge of the language and function of instructional technology and of inclusive practice, young, first year, pre-service teachers will have little choice but to communicate their observations subjectively, using mainly qualifiers and affectives to convey the importance of the issue for them. It also shows that without an informed understanding of the connection between technology, content and pedagogy, the pre-service teachers' comments will tend to be more personal than pedagogical. Moreover, the comments will fall short in articulating the importance of technology and inclusion for promoting Education for All in the primary school classroom.

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