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Competence Vis-à-vis Performance of Special Education Pre-Service Teachers

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Abstract:

This study determined the level of competence among special education pre-service teachers (PSTs) based on their competence as manifested during their actual school immersion. It also investigated how they perform inside the special education classroom setting and how it associates to CK and PCK. Forty-nine special education pre-service teachers from four different universities in Cebu City, Philippines were involved in the study. The PSTs level of competence was statistically measured using a performance appraisal. Findings revealed that special education pre-service teachers did not meet the minimum competence level in both CK and PCK. Meanwhile, they manifested excellent performance along the four areas teaching competencies. Their competence level did not statistically correlate with their level of performance. In conclusion, special education per-service

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teachers lack the competence in the discipline against established standards as espoused by Shulman in 1986. However, the skills acquired in their professional education and specialisation courses equipped them with the needed learnings to become effective performers during their student teaching exposures. PSTs' competence, viewed from CK and PCK, has no bearing with their teaching performance. Even if a PST may not be highly competent, he/she may have high teaching performance and vice-versa. We recommend that education students must to be sufficiently exposed to theory and practice dimensions of special education to make them competent and performing teachers.

Keywords: Competence, special education, pre-service teachers, content knowledge theory

1: INTRODUCTION

Education and non education professionals possess a common concept of what a pre-service teacher (PST) should know. Ideally, PSTs in any teacher education institutions (TEIs) are assumed to possess required knowledge, competencies and attitudes necessary for student learning no matter how diverse these learners may be (Abu-Sharbain, 2012). The general contention indicates that upon completion of their pre-service training in a TEI, pre-service teachers shall have acquired basic content knowledge in specific subject areas, basic general pedagogical principles and practices necessary to effectively deliver teaching content (Choy, Lim and Wong, 2013). Initially, education researchers have considered these two essential elements in teacher preparation as relatively distinct until Shulman postulated in 1987 that there exists a distinctive form of teacher's professional knowledge which is created from the foundations of content knowledge (CK) and pedagogical knowledge but is different from them. He called it "pedagogical content knowledge [PCK]" (Shulman, 1987).

Park and Oliver (2008) reported that in the Shulman (1987) views, pedagogical content knowledge, as an amalgamation of other professional knowledge, creates a critical constitutive element in the knowledge base of teaching. It is therefore safe to assume that these same essential elements that build up the knowledge base of teaching compose the indicators of a teacher's competence as an educator (Kleickmann et al., 2012).

The training and development of teaching profession envision that teachers become well prepared during pre-service trainings to acquire and possess intellectual maturity and emotional security needed when they deliver teaching tasks at the basic education levels after completing their degree programs. Upon graduation of their education degree, pre-services teachers play vital role on the formative years of basic education learners (Abocejo and Padua, 2010; Fernandez and Abocejo, 2014) when they themselves become professional teachers. Their teaching productivity is largely determined by the formative experiences during pre-service teaching exposures.

In the Philippines, the Commission on Higher Education (CHED) Memorandum Order number 30 series of 2004 provides a legal basis of practicum experience as essential part of the teacher-training process. The idea is very clear: that practicum experience must be an integral part of any education program; however, the manner within which this practice teaching experience operates is not prescribed by CHED leading to TEIs crafting their own varying methodologies in the conduct of the practicum course. This may lead to varying experiences gained by PSTs in the different teacher education institution all over the country.

Particularly in Central Visayas Region of the Philippines, some teacher education institutions require their PSTs a specific number of hours teaching in the field while others require a specific number of weeks with varying in-campus and off-campus trainings. Some teacher education

institutions have only off-campus training for their pre-service teachers because of the absence of a laboratory school. This off-campus training will be considered the whole practicum experience. On the other hand, a few teacher education institutions have their laboratory schools where their pre-service teachers initially complete the in-campus training to be prepared for the off-campus exposure. These varying experiences contribute to PSTs practical teaching practice, specifically, on their knowledge of the content taught in actual learning environment, and the strategies they employ in order to deliver the content to their learners.

In the case of government owned universities, which hold true for this study, special education pre-service teachers undergo in-campus training in the laboratory school before they are deployed to the field for off-campus exposure. Despite the fact that they teach in the regular classroom in the laboratory school, they have good teaching performance during their off-campus exposure in special education classrooms as reflected in their evaluation forms signed by their mentors. Considering that their knowledge on handling children with special needs is not put into practice inside the regular classroom, we marvelled what led their commendable teaching performance within the special education classrooms.

We then considered exploring the level of competence of special education PSTs viewed from their CK and PCK and how these associate with their teaching performance in the special education classroom setting. While this paper contends that the pre-service teachers are not yet equipped with the needed competence according to the content knowledge sphere, their teaching performance in the special education classroom setting is commendable.

1.1: Study Objectives

This study delved into the competence level of special education PSTs along their CK and PCK as manifested during actual

school immersion. Specifically, it determined the competence level of the PSTs based on their CK and PCK; performance level of PSTs along lesson planning, strategies of teaching, classroom management, and communication skills. Moreover, we investigated whether competence level is associated with performance level of pre-service teachers.

2: LITERATURE REVIEW

Competent pre-service teachers are expected to manifest most, if not all the skills, attitudes, knowledge and values they are expected to have inculcated in themselves within the course of their 3-year preparation in the university prior to their practicum experience (Abu Sharbain, & Tan, 2012). Crick (as cited in European Commission, 2013) defines competence as an intricate interrelatedness of "knowledge, skills, attitudes, values (KSAVs)" and understanding necessary to develop effective teachers embodying pedagogical skills needed in the society. Likewise, Deakin (2008) describes competence as an amalgam of capabilities, understanding, value systems along specific sphere of knowledge. At the onset, every teaching program aims to produce PSTs possessing sufficient knowledge, attitudes, and competencies essential for the teaching career (Abu-Sharbain and Tan, 2012).

Competent PSTs are expected to manifest most, if not all the KSAVs which, they themselves have inculcated within the course of their 3-year preparation in college prior to their practicum experience (Abu-Sharbain and Tan, 2012). They also suggest that every teacher education program should aim to produce PSTs who possess sufficient knowledge, attitudes, and competencies essential for the teaching career. The European Commission [EU] (2013), noted that its huge number of teachers possess these needed competencies making them effective mentors in the classroom setting. Possessing competence is the key in attaining learner's increased level of

attainment and that, for teachers to run at par with the demands of the fast-changing world, upgrading their professional competencies is deemed imperative (EU, 2013).

Roofe and Miller (2013) further stated that for Jamaican students to assume their roles as prime movers in their society, their training should prepare them to take on leadership roles (Vision 2030 Jamaica: National Development Plan, 2010). One of the directions of their teacher preparation is leadership in education. This notion highlights teachers' role as models of good governance and sound management as exhibited inside the classroom, with their students as their constituents.

There is a vast literature on the investigation of teachers' competence in the different facets of teaching. Competence may be measured based on how well one incorporates information technology (IT) in teaching (Yurdakul, 2011); prepares instructional materials (Numanoğlu and Bayr, 2009); or enables significant student achievement gains (Newton, 2010). While teachers' competence can be measured through many indicators, CK and PCK are inherent components of teacher competence which affect student's performance (Hill, Rowan, and Ball, 2005; Kleickmann et al., 2012;). Moreover, Kleichman et al. (2012) further stated that CK and PCK are key elements of teacher competence which influence student's progress.

These two constructs (CK and PCK) are utilised as indicators of pre-service teachers' competence in teaching, they are used by educationists as indicators of their competence. Schmidt et al. (2009) validated an assessment instrument for pre-service teachers which focused on technological content pedagogical knowledge (TPACK). Meanwhile, Orr, Kunker and Timmons (2014) delved into improving literacy practices in Mathematics and Science among PSTs by enhancing their PCK. They found that the PCK of PSTs, as manifested by their content literacy practices, are shaped by their experiences in

the course "Literacy in the Content Area" and in the six-week experience in the field.

Shulman's (1986) two constructs (CK and PCK) paved way to the development of assessment instruments for PSTs in the aspect of technology (Schmidt et al., 2009), investigation of its development through structural differences (Kleickmann et al., 2012), fostering literacy practices in Science and Math (Orr et al., 2014), its development among PSTs in the areas of Math (Hill, Ball and Schilling, 2008; Cheang, Yeo, Chan and Lim-Teo, 2007), and Science (Van Driel, Verloop and De Vos, 1998). Even though these two constructs have been explored in different angles and uses, there is still limited literature which investigates special education pre-service teachers' level of competence using Shulman's (1986) CK and PCK standard. While there is a vast literature on the assessment of PSTs performance inside the classroom, none has focused on special education pre-service teachers, hence this study.

2.1: Theoretical Background and Conceptual Framework

This study anchored its theoretical framework on Content Knowledge Theory advocated by Shulman in 1986 which postulates that a teacher's CK is divided into three categories namely: (1) subject matter CK, (2) PCK, and (3) curricular knowledge. This study focuses only on the first two.

Previously, Shulman (1986) posited that content knowledge is about the thorough knowledge of the content being taught. Teachers' content knowledge covers their knowledge of the subject matter per se and the underlying reasons and justifications why certain propositions are presented within the subject matter. It goes beyond just the knowledge of the mere facts of a particular subject matter; it also involves understanding why and how certain facts exist, their history, and their relevance to the lives of the learners. Meanwhile, the manner within which how efficiently the

contents have been delivered to the learners can be determined by the teacher's PCK.

Meanwhile, PCK is the second kind of CK among PSTs which refers to the knowledge of how the course content should be taught. A broad sense of pedagogical content knowledge enables teachers to easily shift gears in varying situations and are still able to deliver the same content knowledge with efficiency thereby achieve the desired learning outcomes.

These desired learning outcomes as manifested through the teacher's CK and PCK serve as indicators of a teacher's effectiveness inside the classroom. Primarily, with teachers acting as the facilitators of learning inside a particular learning environment, their varied classroom undertakings greatly affect the learners they have. Hattie (as cited in Kleichman et al., 2012) stated that teachers influence students' learning upon creating opportunities favourable towards students' progress.

In some countries, competence of teachers as a potent cause to national development has been taken into account in the creation of their policies. In Jamaica for example, the Joint Board of Teacher Education (2012) declared that the direction its teacher training should take must be towards the production of teachers who are capable of demonstrating solid pedagogical knowledge and fully understand their duties as educators.

As reflected in Figure 1, special education pre-service teachers are assessed and characterised in terms on their acquired competence and performance. In this paper, the PST's level of competence is measured based on their content knowledge and PCK in the field of special education, and on their curricular knowledge. On the other hand, pre-service teachers' teaching performance is measured along

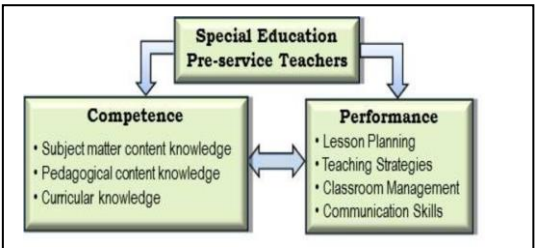

Figure 1: Conceptual Framework of the Study

lesson planning, teaching strategies, classroom management, and communication skills. The two PSTs attributes were also tested for association to determine if competence has bearing on performance and vice-versa.

3: RESEARCH METHODOLOGY

This study was carried our through a descriptive survey and correlational research design. It endeavoured to describe the pre-service teachers' attributes and investigated whether a relationship exists between their competence and performance as pre-service teachers. The respondents were forty-nice (49) special education students undergoing their pre-service teaching practicum at the time of the study (Table 1). They were randomly chosen from two privately universities and two government owned universities. These pre-service teachers were selected following simple random sampling with proportional allocation. Inclusion criteria for the selection of respondents were: (1) should be practicum student enrolled in the current semester; and (2) should be a special education major assigned in a special education classroom.

Table 1. Distribution of Research Respondents

University	N	n	Percent (%)
Privately owned university 1	15	4	3.42
Privately owned university 2	30	18	15.38
Government owned university 1	48	15	12.82
Government owned university 2	24	12	10.26
Total	117	49	41.88

N = number of actual pre-service teachers in the university
n = number of randomly chosen respondents

The test questions utilised in this study were adapted from the "Praxis Tests for Special Education" obtained from the Educational Testing Service (2012) website. This praxis test comes from the American teacher certification examinations administered by the Educational Testing Service (ETS). The first test, composed of 50 multiple choice questions, measured the content knowledge for special education. The second test, composed of 30 multiple choice questions, measured the

pedagogical content knowledge for special education. In determining the level of teaching performance of the PSTs, the Performance Appraisal Sheet for Student Teachers of a government owned university was used. The tool is composed of four components namely: lesson planning, strategies of teaching, classroom management, and communication skills.

Permissions to conduct the study on the four universities were obtained from the deans of the education colleges of the said universities. The PSTs were asked to answer the tests given to them in their most relaxed state so as to elicit the responses of the student teachers without mental pressure for a more reliable response. After accomplishing the test, the test papers were collected and deposited in a secure place. On the other hand, the professors were asked to rate the teaching performance of their PSTs who answered the test using the "Performance Appraisal Sheet". Ratings were gathered during the teaching demonstration of the PSTs. After all the pre-service mentors finished rating all their PSTs, the appraisal sheets were collected. Data from both the test questions and performance appraisal sheets were then tabulated and statistically treated. The null hypothesis of no significant relationship between the SpEd PSTs' level of competence, and performance was tested in this study.

4: DISCUSSION OF RESULTS

We articulate the results of the study by delineating them in four (4) components to address the stated study objectives. The following discussions are geared towards the competence levels of pre-services teachers on CK and PCK, their level of performance and the correlation between competence and performance level.

4.1: Competence level of PSTs in content knowledge

In this study, content knowledge takes into consideration three areas namely: special education core knowledge, exceptionalities, and other specific conditions. The pre-service teachers' competence level on content knowledge based on these 3 areas is presented in Table 2.

Table 2: Competence level of special education pre-service teachers in terms of their content knowledge

Area	Item	Mean	Percent	Description
Special education core knowledge	11	6.11	55.58	Incompetent
Exceptionalities	33	17.75	53.80	Incompetent
Other specific disabilities	6	5.20	87.92	Competent
Overall	**50**	**29.14**	**58.29**	**Incompetent**

Ranges for competence level	***Description***
00.00-59.99	*Incompetent*
60.00-100.00	*Competent*

In terms of special education core knowledge, the pre-service teachers scored low having a mean score of only 6.11 out of 11 points. Taking into consideration the 60% passing as standard passing percentage in the government university where the study was implemented, the results reveal that they are not sufficiently knowledgeable in this area. Core knowledge for SpEd refers to topics relating to the basic concepts in special education which include assessment, educational placement, individualised education plan (IEP), instruction, and intervention. The questions in this area with the lowest number of respondents getting the correct answer fall under the topics IEP and Intervention. For individualised education plan, questions include Individuals with Disabilities Education Act's requirement of an individualised education plan and inclusions of a Family Service Plan for a certain 2-year-old child as per Individuals with Disabilities Education Act (IDEA) provisions.

The question on the sub-area Intervention talked about response cost as an intervention. Response cost involves the removal of a specified amount of reinforcement immediately following a particular behaviour. Out of the 49 respondents, only 12 were able to answer the question correctly. This concept of response cost must have been discussed in one of the major courses in the program. However, the PSTs might not have been given the chance to apply it in a real-life situation. This

contention confirms one of the findings of Roofe and Miller (2013) which expresses that student teachers had "concerns about the balance between theory and practice as regards to what they are being taught". This may be addressed by providing more meaningful learning experiences to students which enable them to put into practical use the theories they learn inside the classroom.

Exceptionalities measured the knowledge of PSTs on "communication, language impairment, emotional behavioural disorder, hearing impairment, learning disability, mental retardation, and visual impairment". In this area, PSTs scored low with a mean of 17.75, a mere 54% of the total 33 items. The PSTs are still not competent in terms of identifying certain exceptionalities based on given characteristics. Among the lowest scoring items in the test were items on the characteristics of students with learning disability; "American association on mental retardation's" definition of mental retardation; most common refractive errors occurring among children with visual impairment; and the most common causes of conductive hearing loss among others.

Discussions on the different kinds of exceptionalities must have been tackled in a good number of major courses in the undergraduate special education program. However, the academic discourses inside the classroom might have been limited only to the most basic concepts that the most essential ideas are left untouched and not tackled. This is an important area to address since this is a powerful learning opportunity for the development of CK and PCK of PSTs.

In the area of "other specific disabilities", the PSTs are competent in terms of identifying other specific conditions as evidenced by their scores with an average of 5.28, 88% of the total number of 6 items. PSTs can competently identify characteristics and manifestations of children with attention-deficit hyperactivity disorder, autism, muscular dystrophy, orthopaedic and physical impairment, and Tourette syndrome.

This could be attributed to the professors' in-depth elaboration of these topics, and their clear presentation and processing of these concepts.

Despite the PSTs' low competence level in their CK as revealed on their test results, it is worthy to note that the tool utilised in determining the CK of the PSTs is US-based and that their culture is relatively different from the Philippines'. This could be one of the reasons why the PSTs scored low in the test. The context used in the questions are all US-based thus, items reflected on the tool might not be applicable in the Philippine setting. This suggests that if the PSTs would want to teach in the US in the future, they need to get acquainted with the American set-up as far as special education is concerned since the tool used in this study is adapted from Praxis tests, the test used in licensing teachers in the US. Over-all, in terms of CK, the PSTs are competent in identifying other specific disorders but have difficulty in dealing with topics relating to exceptionalities.

4.2: Competence level of PST in pedagogical content knowledge

PCK refers to the needed knowledge which enables the subject matter to become accessible to the students (Shulman as cited in Kleickmann et al., 2012). In this study, PCK is measured using real-life classroom situations embedded in a test questionnaire. These situations are based on how the SpEd teacher would handle students with different exceptionalities.

Table 3 shows that the PSTs are not competent in terms of determining the appropriate strategies to be employed in teaching students with different exceptionalities, based on the standard passing percentage of one government owned university which is 60%. This is evidenced by their mean scores that range from 2.00 – 2.95 or 40% – 59% of the total number of test items per area. Looking at the grand mean, 14.96 is relatively low, a mere 50% of the total number of 30 items. It can be said that the PSTs are still not well-versed in terms of identifying certain classroom strategies and teaching practices that would best address a particular exceptionality. Since the questions included in the test are presented in a form of situations, it can also be inferred that the PSTs are not able to critically analyse the given situations leading them to choose the inappropriate choice.

Table 3: Competence level of special education pre-service teachers by area of their pedagogical content knowledge

Area	Item	Mean	Per-cent	Description
Communication/ Language Impairment	5	2.40	47.94	Incompetent
Emotional Behavioral Disorder	5	2.94	58.81	Incompetent
Hearing Impairment	5	2.00	40.14	Incompetent
Learning Disability	5	2.95	58.94	Incompetent
Mental Retardation	5	2.27	45.47	Incompetent
Visual Impairment	5	2.39	47.83	Incompetent
Grand Mean		**2.49**	49.86	**Incompetent**

Ranges for competence — *Description*
00.00-59.99 – *Incompetent*
60.00-100.00 — *Competent*

Among the different exceptionalities included in the test, hearing impairment (HI) is the lowest scored with an average of 2, a mere 40% of the total number of 5 items. Items on this area include IEP preparation for deaf students, reinforcement techniques that can be employed to deaf students, and least restrictive environment for students with HI among others.

Other lowest-scoring items on the test come from the area of communication/language impairment specifically on the functional language training of a child who is nonverbal, and the appropriate technique that a speech therapist would recommend to the teachers of a child who stutters. The first item only garnered 8 correct responses from 49 respondents and the second item got the lowest number of correct responses

which is 5. This could be attributed to the fact that the discussion on the different categories of exceptionality is done in only one or two major courses.

In this kind of system, the amount of time spent in discussing the varying significant concepts (e.g., behaviour modification, classroom management techniques, methods in teaching, approaches, assessment, etc.) about the specific disability is generally less since the professor needs to finish tackling all the stipulated exceptionalities in one course within the semester. This would definitely result to the PSTs, not remembering the concepts discussed or worse, not learning anything important about the exceptionality at all. Consequently, their lack of in-depth knowledge about the specific disability might affect their confidence in teaching in the future. Loreman et al. (2013) found out that one of the concerns of the PSTs is their confidence level in teaching people with disabilities. Instead of clustering all categories of exceptionality in one major course, the categories can be made into major courses which would include all the other important considerations in educating the child who belongs to that exceptionality (e.g., behaviour modification, classroom management techniques, methods in teaching, approaches, assessment, etc.).

Similar with the findings in the CK of pre-service teachers, Table 3 also shows that the special education pre-service teachers have low PCK based on US standards for special education. It should be noted that there is a huge difference between US and Philippine cultures. Factors such as availability of materials, state policies and legal bases of special education, culture-specific differences, school systems and the like should be taken into account. The results further suggest that special education, albeit similar in some respects, should not be stereotyped across countries. Culture for one plays a huge part in the difference of special education practices and innovation from one country to another.

Over-all, the PSTs have the greatest difficulty in dealing with topics relating to exceptionalities and have more than the necessary knowledge on other conditions. They also had difficulty in determining appropriate pedagogical techniques in addressing the academic needs of students with special needs.

4.3: Pre-service Teachers' Level of Performance

Student Teaching in different universities take into consideration various dimensions but this study focuses only on four namely: lesson planning, strategies of teaching, classroom management, and communication skills. The SpEd PSTs were rated on their performance based on the said indicators when they were having their practice teaching inside a SpEd classroom. They were deployed to SPEd Centres with the city study areas. Some of them were assigned in classes for hearing impairment, some were in classes for visual impairment, learning disability, autism, and "attention-deficit/hyperactivity disorder (ADHD)." Table 4 summarises the scores of the pre-services teachers in terms of their actual classroom teaching performance along lesson planning, strategies of teaching, classroom management, and communication skills inside their respective SpEd classrooms.

Table 4: Special education PSTs level of performance

Teaching Competency	Mean	SD	Des-cription
Lesson Planning	9.09	0.70	Excellent
Strategies of Teaching	9.15	0.70	Excellent
Classroom Management	9.15	0.72	Excellent
Communication Skills	9.30	0.80	Excellent
Grand Mean and Overall SD	**9.17**	2.61	**Excellent**

SD – standard deviation

Ranges for the weighted mean		*Description*
00.00-02.00	-	*Poor*
02.01-04.00	-	*Moderately Satisfactory*
04.01-06.00	-	*Satisfactory*
06.01-08.00	-	*Very Satisfactory*
08.01-10.00	-	*Excellent*

As can be gleaned in Table 4, the PSTs are competent in the actual teaching. They can plan their lessons well, they can choose appropriate strategies to be employed in the classroom they are assigned to, they have sound classroom management, and they also have good communication skills. The PSTs must have learned a great deal in their professional education courses. This only goes to show that even if SpEd teachers create IEPs for their learners, it is

also important that they are taught how to construct lesson plans. In other words, there should be a balance between the major courses and the professional education courses. This contention is also true in Jamaican PSTs (Roofe and Miller, 2013) where one among their respondents affirmed that *"t*he education subjects should be focused more on just as much as the specialised areas. This will ensure student teachers are capable of teaching a class on teaching practice with less error in the lesson plans.*"*

Furthermore, they are competent in the classroom management area since one of the major courses offered in the elementary special education program in the universities under study is "classroom management for special education". Along the way, they must have discussed varied classroom management techniques such as establishment of classroom rules and procedures, utilisation of reinforcement techniques, and management of student behaviour among others which they can employ in actual SpEd classrooms.

They also have good communication skills which might be attributed to their exposure to children with special needs in their home or school environment when they were still in their lower years in college. Their exposure to these kind of learners gave them an idea that speaking fast or in full-length English would be of no help since most of these children have lower mental capability and that most of them need to be told something more than a couple of times before they perform or operate. Generally, the special education pre-service teachers' competence level in terms of their teaching performance along lesson planning, teaching strategies, classroom management, and communication skills is excellent.

4.4: Correlation between the Competence and Performance of the Pre-service Teachers

The competence level of the SpEd PSTs is determined using their CK and

PCK scores. Table 5 presents the relationship between the two tested variables namely: competence and performance.

Table 5: Relationship between competence and performance levels if PSTs.

Variable	Mean	SD	r-value	p-value
Competence Level	42.85	8.99	-0.209^{ns}	0.236
Performance Leve	36.83	2.61		

SD – standard deviation, ns = not significant

Table 5 reveals that relationship exists between competence and performance levels among PSTs with a resulting p-value of 0.236. This indicates that CK and PCK do not associated with teaching performance of a teacher be it pre-service, novice, or seasoned one. It is never a guarantee that when the teacher has a high CK and PCK, he/she is also an effective teacher and vice versa. The data reveal that the pre-service teachers have low CK and PCK but high level of teaching performance showing that teachers need not be well-versed in terms of specific CK and PCK to be able to teach well. It should be noted instead that efficiency inside the classroom can be dependent on varied factors such as the knowledge of the learners, the subject matter and its complexity, and the teacher's attitude towards the teaching career among others. In this context, it is postulated that, teaching profession success is attained through knowledge, competencies and attitudes (Abu-Sharbain et al., 2012).

In this study, we assumed that the pre-services teachers do more in dealing with children in the real classroom than looking at these virtual learners within the confines of the given situation in the paper and pencil test. Meaning, the situations presented in the questionnaires, while substantial and could potentially measure a teacher's analytical skill, is not very appealing to the PSTs, owing to the fact that they are just in the test questions – flat, fictional and limited in terms of information. They possibly have not comprehended and appreciated the weight of the situation unless they would experience it first-hand. This finding can be attributed to the willingness of the PSTs to deal more will real-life situations at

hand, solving problems when they are already in front of them, and analysing situations when they are already involved. However, although this suggests that the PSTs are already good in terms of dealing with real-life situations, this might also be interpreted as unpreparedness on their part, or refusal to get prepared, at the least. The situations presented in the test are already good examples of situations they can analyse in order to address the same problem posed in the given situation should it happen to them unexpectedly. Apparently, the CK and PCK of PSTs have no significant association with their teaching performance inside the classroom.

V: CONCLUSION AND RECOMMENDATIONS

In the light of the study findings, we concluded that pre-service teachers with concentration in special education are not competent in their CK and PCK during actual school immersion. However, the skills and teaching competencies learned from their major courses and professional education courses have prepared them to become effective teachers during their practicum. This study also confirms the argument of Shulman in 1986 wherein the knowledge of special education PSTs inherently subsumed CK and PCK.

Moving forward, based on the findings generated in this study, we recommend that special education students be sufficiently exposed to both theory and practice dimensions of special education upon commencing university studies. The theory dimension can address their content knowledge while the practice dimension equip them with pedagogical content knowledge thereby make them competent when they undergo pre-service teacher experiences. At the policy level, we recommend for an inclusion of topics on family service plan and "Individuals with Disabilities Education Act (IDEA)" requirements of individualised education plan in the course content or syllabi by professors who teach and handle the

individualised education plan course. There can be a major course for exceptionality category to pave way for a more in-depth coverage including specific topics on classroom management, behaviour modification, home and family life, and assessment. Instructional materials to be used in the delivery of these courses must address a particular exceptionality.

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