Pre-service Teachers' Perception towards Professional Courses and The Efficacy of Subject Methodology Courses in Developing Pedagogical Content Knowledge

Dawit Mekonnen* and Alemayehu Bishaw*

Abstract: *One hundred eight (76 novice student teachers and 32 students with teaching experience) students' perception toward the clarity, relevance, enjoyment, and workload of professional courses, and the adequacy of seven departments' subject methodology courses in developing pedagogical content knowledge were examined through questionnaire, interview and document analysis, percentage, Pearson Product Moment Correlation, t-test, Tukey honestly significant difference. (HSD), One-way repeated measure ANOVA and qualitative analysis were used to analyze data. Results revealed that students' overall perception toward professional courses was neutral. But statistically significant difference was observed in students' rating of the four dimensions. Students opted for the clarity and low pressure (workload) of professional courses while they remained neutral about relevance and enjoyment. Yet, when students' perception of relevance was compared with enjoyment, a statistically significant difference was observed in favor of relevance. Students with teaching experience rated higher than students with out teaching experience on the clarity and relevance of professional courses though the difference in the latter was not statistically significant. Students observation of what instructors in the faculty were doing and the role professional courses had in the curriculum of teacher education were found to be major reference points for students in explaining their perception of professional courses relevance and enjoyment rather than the inherent characteristics of these courses. The development of pedagogical content knowledge looked to suffer heavily, except Amharic and English departments, as the contents of subject methodology courses unnecessarily emphasized general professional knowledge with little or non-inclusion of pedagogical content knowledge. One obvious distinguishing factor between Amharic and English departments and the remaining departments was the kind of training of instructors.*

* Lecturers, Faculty of Education, Bahir Dar University.

Introduction

Foundations and Controversies in the Theoretical Framework of Teacher Education

The term teacher education includes a deliberate educational intervention designed to develop teachers through pre-service, in-service and induction programs. Though the routes and strategies these programs follow vary, they overlap when their final destiny is considered - the preparation of teachers who cannot only teach but also help students to learn by creating learning environments in which concepts and procedures become more meaningful (Goldman and Barron, 1990).

However, there is no agreement among scholars how best this could be accomplished. One could see the root of the argument from the basic tenets of teaching: teaching as a science and teaching as an art. Those (e.g., Schulman, 1987; and behavioral objective model adherents) who advocate teaching as a science argue that teachers can acquire basic skills and knowledge of teaching through training that guide what they do in and out of the classroom. The latter, advocated by Stenhouse (1977), Height (1951), Eisner (1985), and Adelman (1988), as cited in Wood (1997:9), argue, "Teaching is a socially constructed activity." They contend that the scientific view oversimplified the intricate situation and regards teaching as purely quantifiable and uniform in unpredictable and diverse circumstances. Currently, however, the view of teaching is that teaching deviates from any of the two single demarcations and amalgamate aspects of both orientations (Wood, 1997).

With the view that skill and knowledge of teaching can be acquired through training, teacher education institutions encompass professional courses besides subject area courses. Yet, routed on the foregoing controversy rests the debate whether subject area

courses or professional courses affect more teaching performance. The implication of the controversy does not end up in a mere finding that explains the effect of one or another on teachers' classroom practice. Rather it escalates to the extent of de-emphasizing and then overshadowing one at the expense of the other.

Some researchers as cited in Ferguson and Womack (1993), for instance, contended the increment in subject area courses at the expense of professional courses. A similar view was reflected in many higher education instructors who had no prior training or experience in teaching (Porter, 1988). There are also research results (Ball and Mcdiarmid, 1990; Hawk, Coble, and Swanson, 1985; Druva and Anderson, 1983) that demonstrate the positive effect and relationship between subject area knowledge and teaching performance.

On the other hand, Ferguson and Womack (1993) argued that there were few evidences that indicate increment in teaching effectiveness with an increment in subject area knowledge beyond certification requirements. Supporting this, Ashton and Crocker (1987) state that only five out of fourteen reviewed studies indicated a positive relationship between number of credits teachers took in their subjects and their teaching performance. In their evaluation of the extent to which professional and subject course work predicted teaching performance, Ferguson and Womack (1993) found out that the proportion of variance attributable to professional course work was 16.5 percent, while major GPA accounted for less than 1 percent. Grossman (1989) and Skipper and Quantz (1987) also reported similar findings.

Thus, it appears that the controversy on what matters more is inconclusive as there are research findings and advocators on the sides of both claims. Still, despite these arguments, there is a broad understanding that neither subject area courses nor professional

courses separately or in combination suffice in preparing effective teachers. For instance, Kennedy (1991) and Nemser and Parker (1990) noted that majoring in subject area could not by itself assure effectiveness in classroom instruction.

Why is subject area knowledge solely inadequate to serve as a knowledge base of teaching and teacher education? What justifies the very existence of professional courses in teacher education? The answers to these questions are not only difficult but have also involved educators in unstoppable debate since the inception of teacher education. It will be too ambitious to overview the argument that surrounds the issue. However, it seems proper to highlight the rational underlying the inclusion of professional courses in teacher education. For example, Reily (1989) as cited in Condon et al (1993), after indicating the storm and swinging condition the knowledge base of teacher education had gone through, noted that the learner should be the knowledge base for teaching and teacher education. If one agrees with the constructionist perspective that learning to teach is a process of constructing meaning, the question that immediately dials in his/her mind then has to be how do students construct meaning? Students can do this only when they are given the opportunity to analyze and make decisions about what knowledge is from their experiences, allowed to teach in simulated and actual conditions, taught in the way they are expected to teach; and understand the psychology of human learning (Condon, et al , 1993).

This constructionist view certainly challenges the belief of many subject area lecturers that teaching is transmitting information to students, and by far questions what they are doing. Although it may sound paradoxical, it is common to find instructors who view themselves as historians, physicists, chemists, biologists, geographers, and the like rather than as educators; however, they are there to train teachers how to teach.

In addition to subject area and professional knowledge, the knowledge base of teacher education is composed of pedagogical content knowledge (Schulman, 1987; Valli and Tom, 1988). The first two are common terms in teacher education, while the third may deserve some more explanation.

Pedagogical content knowledge (hereafter PCK), coined by Schulman, refers to the "particular form of content knowledge that embodies aspects of content most germane to its teachability (1986:9)" This includes, he further writes,

> for the most regularly topics in one's subject area, the most useful forms of representation of these ideas, the most powerful analogies, illustrations, examples, explanations and demonstration in a word the ways of representing and formulating the subject that make it comprehensible to others.

It represents a class of knowledge that is central to teachers' work and that would not typically be held by non-teaching subject matter experts (Marks, 1990).

Though Pedagogical Content Knowledge (PCK) is a recent phenomenon, there are two views on its development. Schulman adheres to a process called transformation - adapting subject area knowledge for pedagogical purpose. Whereas, Cochran, DeRuiter and King (1993), after changing the name of PCK to pedagogical content knowing (hereafter PCKg) in their constructionist perspective maintain that PCKg demands teachers to develop pedagogical knowledge and subject area knowledge by understanding student characteristics such as their abilities, attitudes, motivation and developmental levels and environmental contexts of learning. This requires, according to Cochran, DeRuiter and King (1993:266) *modeling and sharing of teaching decisions and strategies with students by education and subject area faculty...* Instructors must

understand the result of PCKg to foster its development in teacher education students and to enrich their own teaching. Certainly, it is when instructors have the expertise and belief about the importance of PCK that they will include contents and objectives meant for developing PCK. Lack of knowledge and belief, on the other hand, entails the exclusion of contents and objectives related to PCK, which ultimately results in students' lack of competence on how to teach their subjects.

To meet the demands for developing pedagogical content knowledge, general pedagogy courses should be followed by method courses in a particular subject (Marks, 1990) and integrated instruction should be given across liberal arts, pedagogy and subject methodology. While the subject method courses may encompass subject matter knowledge as content to demonstrate the how to teach in that particular subject, they are hoped to equip students with the specific skill required in teaching that particular subject. In relation to this, Grossman (1989:25) has documented the following.

> Teacher education, particularly the subject-specific (subject methodology) component of teacher education, represents a third potential source for the acquisition of pedagogical content knowledge. This subject-specific course work is designed to provide beginning teachers with a perspective on what it means to teach a particular subject as well as offering specific teaching strategies for that course. The intent of subject specific pedagogical course work, then, could be conceptualized as the transmission of pedagogical content knowledge.

However, Grossman notes, despite this firm belief about the objectives and contents of subject methodology courses, little is known about the actual content of subject methodology courses.

It is based on the foregoing rational that teacher education degree programs in our country included 28-32 credit hours professional courses. From these credit hours, 25 credit hours are meant for general professional courses, three credit hours, six in some departments, for subject methodology, and two credit hours for student teaching.

Fulfilling the foundations of teacher education programs is a necessary precondition, but it is neither sufficient nor an indicator of effective teacher preparation. There are a number of intermediary factors that have determinant effect on how well the above measures are put into practice. One pertinent issue is teacher educators' practice in carrying out courses related to the development of PCK. These practices are further mediated by teachers' values (Gudmundsdottir, 1990) and know how to teach courses in line with intended purposes. In relation to this, Gudmundsdottir stated that though teachers' conceptions of the subject matter they teach is ignored in most educational research, they are embedded in teacher education, and need to be studied.

Moreover, the beliefs and training of teacher educators do not only affect their practice, but also student teachers' understanding and conception of teaching a certain subject (Brickhouse, 1990). Hence, research on the development of PCK on prospective teachers progress through courses in the context of teacher education should be conducted (Ibid.). Added to this is the need to evaluate the effectiveness of methods in teacher education programs (Cochran, DeRuiter, and King, 1993).

One commonly used mechanism in program or course evaluation is student rating. In relation to this, Theall and Franklin (1990) have noted that student ratings are important means to assess the relevance they attach to courses and the workload of courses. Research indicates that students rate different academic fields

differently (Cashin, 1990). Professional courses tend to be rated as medium in both course and instructor effectiveness while science courses, and arts and humanities are rated as low and high respectively. Though the reasons are not clearly uncovered, it is hypothesized that the grades students score in the field, the function of the course in the curriculum, students' major area and the background knowledge and students interest are explaining factors (Cashin, 1990).

The understanding of students' perception toward professional courses through their rating would be a timely issue in Ethiopian context where little is known about the contribution of these courses to professional development. Moreover, students in teacher education colleges and universities are heard complaining about the 28-32 credit hours professional course weight introduced by the Ministry of Education. Underscoring the upheaval of students view in the academic year of 1999/2000, Teklehaimanot (2000) labeled the year as "a crisis year" of secondary teacher education institutions. How can this unwelcoming view of students be explained? How do students perceive professional courses in relation to various course effectiveness indicators? These are questions that seek answers. Besides, it is consequential to examine the contents and objectives of subject methodology courses in light of the little evidence that exists regarding the actual course content of subject methodology courses at global level (Grossman, 1989) and the lack of any evidence at local level.

Traced on the suggestions of various scholars and the research gap in our country, this study attempts to explore students' conception toward professional courses and the efficacy of subject methodology courses in developing pedagogical content knowledge in the Education Faculty of Bahir Dar University. Accordingly, the study was designed to answer the following leading questions.

- How do students perceive professional courses in terms of vocational relevance, clarity in goals, enjoyment, and workload?
- Do subject methodology courses include contents and objectives that can sufficiently develop pedagogical content knowledge?
- Is there a variation on professional courses conception between students with prior teaching experience and without teaching experience?
- What is the interrelationship among students conception toward professional courses, major GPA, professional courses GPA and teaching practice result?
- Is there a variation in the emphasis given to contents and objectives for pedagogical content knowledge among subject methodology teachers?

Methodology

Subjects

All 4th year students (140) in the Education Faculty of Bahir Dar University in the academic year of 1999/ 2000 were the subjects of the study. Since the number of students was manageable, all the students were included in the study through comprehensive sampling technique. But in the analysis part only 108 students were used. The responses of the remaining students were discarded because they were incomplete. Of 108 students, 76 of them did not have teaching experience while the remaining 32 had teaching experience at primary or junior secondary school. These students joined the degree program through advanced standing and by improving their ESLCE results after graduating from teacher training institutions.

Data Collection Instruments and Procedures

Documents

In order to examine the extent in which subject methodology courses promoted pedagogical content knowledge, the course outlines of seven departments (the universe) were analyzed into three forms of knowledge: subject matter, general professional and pedagogical content knowledge. The units of analysis were contents (sentences) and objectives listed in the course outlines. That is, the theme appearing in each content and objective was coded in relation to the three categories of knowledge: subject area, general professional content, and pedagogical content knowledge. If objectives or contents dealt with curriculum, general method of teaching, evaluation, classroom management, and other related issues they were categorized under general professional content. If they were dealing with techniques of how to teach specific contents in particular subject, knowledge of curriculum and curriculum materials in a particular subject, and concepts related to understanding students' belief in particular subject, they were categorized under pedagogical content knowledge. In addition, if the objectives and contents dealt with subject matter knowledge, they were categorized as subject area. Analysis of objectives was made only for three departments as the course outlines of remaining departments was devoid of objectives.

Students' performance in professional courses, subject area courses and teaching practice was also collected from the registrar office.

Questionnaire

A questionnaire was prepared for students to examine their perception toward professional courses. There were 16 items to be rated on a five-point scale of strongly agree (5), agree (4), undecided

(3), disagree (2), and strongly disagree (1). The items were grouped into four dimensions (4 items for each): vocational relevance, clarity in goals and standards, enjoyment, and workload. They were adapted from the questionnaire developed to study course perception by Ramsden and Entwistle (1981) by taking from Gibbs, Habeshaw, and Habeshaw (1989).

Relevance. This dimension is related to the value students attached to professional courses in developing their teaching competence and the judgment students have on professional courses relationship with actual teaching requirements.

Enjoyment. This dimension represents students' cumulative reaction to the number of professional courses and how interesting and enjoyable were the courses to them.

Clarity. This refers to how clear the objectives and contents of professional courses are and the extent students' expectation in achievement and effort match with what they experienced from the courses.

Workload. This refers to the pressure students feel while taking professional courses and in their preparation for examination. The items in the questionnaire were written in high load terms (such as *In exam time my mind is preoccupied with professional courses.* Professional courses put a lot of pressure to pass. Hence, higher rating implies higher workload and vice versa.

The questionnaire was administered after students carried out one-week actual observation of classroom conditions and two-week actual teaching practice. This was done to give students the opportunity to examine professional courses relevance after they encountered what teaching demanded in actual situation. The questionnaire was administered in classes by the researchers themselves. The reliability

coefficient of the questionnaire was found to be 0.79. This questionnaire was used for the study as its reliability index was qualified as "good" on the basis of the standard set by Shaw and Wright(1967). (Refer to Appendix 1 for the whole text of the questionnaire.

Interview

An interview was also conducted with 21 randomly selected students to gather data related to relevance and enjoyment. The interview was meant for addressing issues that the questionnaire couldn't uncover. The interview was exclusively used for relevance and enjoyment dimensions for the researchers thought that they were more pertinent dimensions that would explain students' unwelcoming reactions manifested in various teacher education institutions. Moreover, the interview was intended to identify specific courses that students presumed were less relevant or irrelevant and the causes that were the basis for students' view of relevance and enjoyment. Questions such as 'How do you view the relevance of professional courses? Which course/s in your view is/ are less relevant or irrelevant? Why are they so? and Do you like professional courses? were posed to unveil specific courses which students regarded are irrelevant and major causes that constrained students belief of relevance and enjoyment.

In addition, informal conversation was conducted with 5 subject methodology instructors to assess how competent they felt to teach the subject. One subject methodology teacher was not voluntary while two instructors were left out purposely as they were specialized in the area. The conversation was conducted with individual instructors.

Data Analysis Procedure

Content analysis of course outlines of subject methodology courses was made by the two investigators. The objectives and contents were grouped into three categories of knowledge: subject matter, general professional, and pedagogical content knowledge. There was 100% agreement between the two raters. Based on the tabulation, percentage was used to see the emphasis given on subject methodology courses.

To compare students' rated mean values of perception toward professional courses and the four dimensions with their respective expected mean scores, t-test was applied. One- way Repeated Measures ANOVA was used to see whether there was a difference in students' perception of professional courses in terms of the four dimensions. Tukey honestly significant difference(HSD) test was also employed to see the existence of variation among the four dimensions. Pearson Product Moment Correlation Coefficient was also run to see the relationship among perception score, GPA, experience, and teaching practice result.

Presentations and Analysis of Data

In this part data gathered through questionnaire, interview and from documents are presented and analyzed.

Table 1 portrays that there is no significant difference between the expected mean value and the actual perception mean score of students at 0.05 alpha level. That is to say student teachers' perception toward professional courses remain undecided. They seem reluctant to take a position for or against professional courses. However, this is only a crude interpretation without considering their view in relation to the various dimensions of perception. To examine whether there exists variation in the rated mean values of relevance,

clarity, workload and enjoyment one-way Repeated Measures ANOVA was run.

Table 1: Comparison of Students Perception Rating toward Professional Courses with Expected Score

Rated Mean Score	Expected Mean Score	Variance	n	Df	t-cal	t-cr
48.23	48	84.62	108	107	0.239*	1.99

* P>0.05

Table 2: Means and Variances of Students' Perception of Professional Courses

Groups	N	Mean	Variance
Clarity	108	13.03	7.21
Relevance	108	12.67	14.69
Enjoyment	108	11.21	16.77
Workload	108	11.32	5.49

Table 3: One-Way Repeated Measures ANOVA of Students' Rating of Professional Courses Perception in Relation to Clarity, Relevance, Enjoyment, and Workload

Source of Variation	SS	Df	MS	F	p	F-cr.
Students (S)	2248.46	105				
Dimensions (D)	306.58	3	102.19	13.23*	p<0.0001	2.63
Interaction (sxd)	2434.43	315	7.73			
Total	4989.47	423				

Table 2 shows that the mean rating of clarity is the highest while enjoyment appears to have the lowest mean value. As a whole the students' response on workload and clarity tend to have greater similarity as they have relatively lower variances as compared to relevance and enjoyment that have higher variances. Students' perception toward relevance and enjoyment tend to vary considerably

among themselves and to fall apart from the mean value in any direction, thus greater heterogeneity in their rating.

Table 3 depicts that a statistically significant difference exists among the mean values of the four dimensions of perception at 0.0001 alpha level. This shows students rating of certain dimensions are statistically different from their rating of some other dimensions. To identify which dimensions' mean ratings are statistically different from the other, Tukey HSD method was applied.

Table 4: Pair-wise Comparison of Means Among Students Ratings of Professional Courses' Relevance, Clarity, Enjoyment and Workload

Groups	Relevance	Enjoyment	Work Load
Clarity	0.36	1.82*	1.71*
Relevance		1.46*	1.35*
Enjoyment			0.11

*p <0.05 Tukey HSD = 0.98.

Table 4 portrays that there is no significant difference between students mean values of clarity and relevance. That is students' perception toward professional courses clarity and relevance tends to be similar. But the mean value of clarity is statistically different from the mean values of enjoyment and workload. Students seem to have rated higher the clarity of professional courses compared to their enjoyment. The same table indicates that students' perception of professional courses relevance is higher than enjoyment. Clarity and relevance were found out to be categories that students agreed positively compared to enjoyment. It is thought-provoking why students fail to enjoy professional courses to the extent that they believe that they are clear and relevant. An attempt was also made to see whether the mean values of the various dimensions significantly differ from the expected mean value. To this end, t-test was used.

Table 5: t-test Values of Students Rating of Professional Courses

Dimensions	Rated mean values	Expected (undecided) mean value	Variance	t-calculated	t-critical
Clarity	13.03	12	7.21	3.67*	1.99
Relevance	12.67	12	14.69	1.84	
Enjoyment	11.21	12	16.77	1.68	
Workload	11.32	12	5.47	2.77*	

*P<0.05

N.B. Lower rating in workload indicates agreement in low workload whereas high rating indicates high pressure in workload.

Table 6: Comparison of Professional Courses Perception

	Mean	Variance	n	Df	t-cal	t-cr.
Students with teaching experience	57.66	72.49	76	106	2.17*	1.99
Students without teaching experience	47.62	91.57	32			

*p<0.05

Table 5 depicts that student teachers rated mean values of clarity and workload have a statistically significant divergence from the expected mean value at 0.05 alpha level. Students tend to agree on the clarity of professional courses and the low pressure these courses put upon them. However, in the case of relevance the rated mean value is greater than the expected mean value but the difference was not found to be significant. That is, their position is neutral, neither agree nor disagree about their relevance. The same holds true for enjoyment. But in this case the rated mean value is less than the expected mean value.

Another purpose of the study was to examine whether students' perception toward professional courses varies between experienced and novice students.

Table 6 indicates that students with teaching experience seem to have more positive perception toward professional courses than students without teaching experience.

Table 7: Differences Between Students with and without Teaching Experience Ratings in Clarity, Relevance, Enjoyment, and Workload of Professional Courses

	Means		Variances				
Sources	Experienced Students	Novice Students	Experienced Students	Novice Students	df	t-cal.	t-cr.
Clarity	14.44	12.72	3.80	8.36		3.07*	
Relevance	13.44	12.49	14.13	15.12	106	1.17	1.99
Enjoyment	12.06	10.88	15.42	17.12		1.37	
Workload	11.72	11.49	8.21	5.80		0.43	

*p<0.05

Table 7 indicates that experienced and novice student teachers statistically differ only in their rating of clarity. Experienced student teachers tend to regard professional courses more clear than novice student teachers do. A summary of the interaction results between experience and perception is depicted in Figure 1. The perception category scores are taken from Table 7.

From the graph it is possible to see that there is a certain degree of interaction between experience and the four dimensions of perception. Experience appears to account for a larger difference in clarity and relevance as compared to enjoyment and workload. Both novice and experienced student teachers seem to have a similar view on workload, as the lines are close enough to overlap.

Table 8 displays that teaching practice result has positive but low relationship with both major GPA and professional courses GPA. Perception score almost has no relationship with both teaching practice result (-0.08) and major GPA (-0.03). But perception score has low positive relationship with professional GPA (0.12). It seems

very difficult to take whether professional courses or major GPA accounted more for teaching practice result.

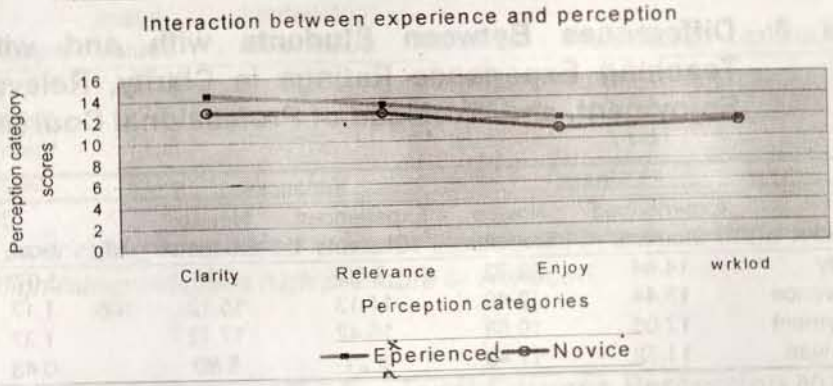

Fig. 1 Interaction between Experience and Perception

An interview was also used to gather data on students' perception of professional courses relevance and enjoyment. Students' responses about the relevance of professional courses could be categorized under three groups. The first group of students tends to regard professional courses relevant in enhancing their teaching competence. The second group of students opts for many of the courses while they reported to see no relevance in some of the courses. Courses that were frequently mentioned as having no relevance are Developmental Psychology and History and Philosophy of Education.

According to the students, developmental psychology is more of 'physiological' with little concern to cognitive development. They also noted that the course was focused to lower age human development while they were expected to teach older children and adolescents. Besides, students reported the difficulty to relate theoretical concepts with demands of practical situation. Underscoring this point, a student remarked:

> I have little or none to remember what developmental psychology has for practical teaching. It was about human development. No relationship was made how this development determines teachers' method of teaching and learning of students.

Table 8: The Relationships Among Professional Courses GPA, Major GPA, Experience, Perception Score and Teaching Practice Result

	MGPA	PCGPA	Perception Score	Experience
Teaching practice	0.1	0.16	-0.08	0.12
MGPA		0.8*	0.03	0.35*
PCGPA			0.12	0.45*
Perception Score				0.12

*p<0.05

In relation to History and Philosophy of Education, many tended to regard the course not relevant for it dealt with a 'past event.' Besides, some students reported that the contents of the course needed broad base of education that they did not have. One student stated:

> The course is too abstract and remote. It is beyond my scope to see what I can learn from the course to develop my teaching competence. Many of the contents are new and difficult as I took the course while I was a second year student (first semester) with no educational background.

This view of irrelevance seems to be widely shared among preservice student teachers (Reynolds, 1993). Pointing out that foundational studies include History and Philosophy of Education and Psychological contents, Reynolds noted that students usually considered them less practical than method and subject area courses for they had difficulty in relating philosophy and theory to classroom practice.

The third group of students regarded professional courses as a whole not relevant to develop their teaching competence. One of the students stated:

> I could see many instructors who do not apply the theories and principles of educational courses. Teaching is lecturing; examinations are workouts, and no questions in the classroom. Still, I feel that my instructors are teaching in a good way and I think I can teach my subject very well even when I don't take professional courses.

Another student explaining his view that professional courses did not have relevance noted:

> I scored 'C' in many of the professional courses and I have not been serious in attending the courses, yet I scored 'A' in teaching practice

The views of these students seem to imply a number of interesting things. Students' conception of good teaching and what teaching should be is colored not only by what they are taught but also by what they observe. To the student who equates "lecturing as good teaching" as a result of his observation, the principles of General Methodology and/or Subject Methodology are too weak to counteract his belief and change his practice. Thus, it appears that students judgment of relevance do not necessarily base on what they face in teaching practice. Their observation and experience seems to be a standard for measuring relevance, and may even be stronger than from what they are taught.

Moreover, students seem to use their teaching practice result as a real testimony of teaching competence. And, if professional courses, in their view, have a role in enhancing teaching competence they seem to expect to see positive relationship with teaching practice

result. But this may not be always true for different reasons. Who evaluates students' teaching competence? What are the yardsticks for assessing competence? This may result in grading the same work of the same student in different ways as the 'who' and 'what' vary. Generally, students' yardsticks for relevance (teaching practice result and instructors actual practice) have a lot to suggest for teacher education institutions.

With regards to enjoyment, while some students seemed to have a positive view, many of the students were found to maintain unfavorable view towards professional courses. Interestingly enough, students attribution for lack of enjoyment seemed to stem from external factors. For many students, it was not the inherent characteristics of professional courses that made them not enjoyable but what the courses were meant for. To mention some students' responses:

> I appreciate the science of teaching students, testing, and research methods in education. But I do not enjoy professional courses for I don't want to be a teacher.

Another student says:

> I think professional courses will decrease my chance of changing the teaching profession. Because this will affect my life, I do not like them.

This study also attempted to address the efficacy of subject methodology courses in developing pedagogical content knowledge. This was examined on the basis of the course objectives and contents indicated on the course outlines.

As mentioned in the methodology part only Mathematics, Physics and Amharic subject methodology courses included course objectives. Chemistry, Geography, Biology, and English subject methodology

course outlines indicated no objectives. The history department did not have as such a well-defined course outline for the course.

Further analyses of the objectives in Mathematics, Physics and Amharic subject methodology courses in relation to their emphasis on pedagogical content knowledge, subject area knowledge, and general professional knowledge revealed that 6 out of 8 Amharic subject methodology course objectives were targeted to develop pedagogical content knowledge. The other two objectives were related to general professional knowledge. Objectives such as:

> ቃላትን በተሻለ የማስተማሪያ ዘዴ ያስተምራሉ (Teach words with appropriate teaching method) ከዘመናዊ የሰዋሰው የማስተማሪያ ዘዴዎች ጋር በመተዋወቅ ተግባራዊ ያደርጋል (Acquaint themselves with modern grammar teaching methods so as to apply them)

reflect the essence of pedagogical content knowledge. While objectives such as

> በማስተማሪያ ክፍል ውስጥ ለሚከሰቱት የዲሲፕሊን ችግሮች ተገቢውን ምላሽ ይሰጣሉ (React properly with classroom disciplinary problems) በማስተማሪያ ክፍል ውስጥ የሚከሰቱትን የዲስፕሊን ችግሮች ምንጫቸውን ይለያሉ (Identify disciplinary problems and their causes in a classroom) represent general professional knowledge.

Among the seven Mathematics subject methodology course objectives, two of them (discuss the different methods of presenting a mathematics topic and acquire techniques and skills of teaching mathematics) represent pedagogical content knowledge. Four objectives are meant for developing professional knowledge such as 'explain the importance of applying variety teaching methods' represent general professional knowledge.

Apart from the course outline objectives, course contents of subject methodology courses were analyzed into pedagogical content knowledge, general professional knowledge, and subject matter knowledge.

Table 9: Analysis of Subject Methodology Course Outlines Contents into Subject Matter Knowledge, Professional Knowledge and Pedagogical Content Knowledge.

Departments	Subject area knowledge	Professional knowledge	Pedagogical Content Knowledge
Geography	4(29%)	15(71%)	-
English	-	7(24%)	22(76%)
Amharic	-	2(40%)	3(60%)
Biology	-	18(100%)	-
Physics	-	8(67%)	4(33%)
Mathematics	1(7%)	12(80%)	2(13%)
Chemistry	-	16(60%)	11(40%)

As the data in Table 9 show, 76% of the total contents in the course outline of English subject methodology course deal with pedagogical content knowledge while the remaining 24% deal with professional knowledge. It appears that the course is well designed to develop the skill of teaching specific contents in English. Sixty and Forty percent of the contents in Amharic and Chemistry subject methodology courses are related to pedagogical content knowledge respectively. Thirty-three and thirteen percent of the contents are related to pedagogical content knowledge while sixty-seven and eighty percent of the contents are related to general professional knowledge in Physics and Mathematics subject methodology course outlines, respectively. The Biology and Geography subject methodology course outlines do not include any content on pedagogical content knowledge. They are committed to general professional knowledge and subject area knowledge.

Generally it appears that except the Amharic (60%) and English (76%) subject methodology courses, the contents in other departments are related more to general professional knowledge at the expense of subject specific pedagogical knowledge. Moreover the course outlines of some departments totally overlooked content specific pedagogical knowledge.

Discussion and Implications

Roughly speaking student teachers tend to be neutral in their perception toward professional courses. That is to say, they seem to refrain from taking a position in either direction in many of the items or they tend to take a subtle position in one direction at one time and a different subtle position at another time that could end up in the middle at last. Still, given the four years exposure students have to professional courses it is important to hypothesize a number of reasons that could justify students lack of position.

One possible explanation given by Brousseau and Freeman (1988), as cited by McDiarmid (1990), is teacher educators unwillingness or reluctance to challenge students' initial beliefs while focusing on issues which their students agree. Student teachers complete their educational programs without wearing off their fundamental initial beliefs by rejecting or ignoring those that they don't believe in. The findings in this study also seem to confirm this assertion. Though the study does not address the beliefs of student teachers toward professional courses at the beginning, it still appeared that their belief, after four years of study, remains undecided.

What matters here very much is the consequence this belief bears upon students' attention to professional courses. It is unwise to expect students to be committed to courses that they doubt to have merit in enhancing their teaching competence.

Despite students' neutrality in their overall perception toward professional courses, they were found to agree on the clarity and less demanding nature of professional courses. Student teachers seem to believe that professional courses have clear direction and purpose to reach and make them less stressed and occupied in the teaching learning process. As to the work load of education courses, Twombly (1992) stated that students reported less study time for general education courses as compared to their major courses as their purpose for the former was usually to memorize to pass examinations. Moreover, seemingly paradoxical, there was a view that students tended to give lower rating for courses that defined the content clearly; were less extensive and more measurable (Cashin, 1990).

When the mean ratings of the four dimensions were compared among each other, students' mean ratings of clarity and relevance were found to be statistically greater than enjoyment and workload. Hence though it is true that students are neutral in their perception about the relevance and enjoyment of professional courses, they tend to opt for relevance as compared to enjoyment.

It is important to consider some possible rational that could explain students' neutrality in relevance and enjoyment. McDiarmid (1990:12) noted, *beginning teachers tend to believe that they were not taught essential knowledge, such as how to manage a classroom regardless of whether or not they were exposed to such knowledge*. The rational for this, he explained, is that students do not see the relevance of what they are taught, as there is no immediate requirement of that knowledge when they are in colleges or universities.

Another point worth mentioning to explain why students fail to see the relevance of professional courses could be the methodology followed by the institution and instructors. Students that number 70 and above are usually assigned to take professional courses in a single room.

Where tact rather than mere knowledge is the main intent, it would be too far to reach the objectives of professional courses in such kind of teaching-learning situations. Instructors could retreat from assigning works that are meant to develop professional competence. To refute what professional course instructors are preaching by their own, teaching becomes mere telling. Moreover, too worsen students widely held belief that professional courses are too academic (Brickhouse,1990), teaching becomes highly theoretical deviating from the basic rational for the provision of professional courses-to help students acquire knowledge and skills needed for teaching. As instructors and staff members, researchers have experienced and observed the difficulty to manage lesson plans, unit plans, syllabus preparation, research proposal preparation and test item preparation and other pertinent work when a single instructor is supposed to teach 200 to 300 students.

Added to these is the lack of bridge between teacher training institution and schools. Given the current prevailing view for wider field experiences while students are in pre-service training, it is too distressing to find prospective teachers having only two-three weeks exposure of actual teaching learning situation in their four.year stay. In fact, many educators agree that students and subject matter experts fear about the relevance of professional courses as teacher education institutions fall apart at distant from their business centers-schools.

If exposure to actual teaching learning situation is hoped to be a means for raising student perception of professional courses, why did experienced student teachers perception of relevance fail to be significantly different from novice student teachers? This might be explained by considering the nature of courses and the critical appraisal experienced teachers could have toward professional courses. As indicated in the presentation part, students noted that some of the courses were too abstract and far to grasp their

relevance. Secondly, experienced student teachers' appraisal could be critical, as they could know very well the requirements of teaching learning situation. That is, experienced student teachers may expect professional courses to equip them with the necessary craft and practical knowledge that would be easily transferable to other teaching situation. This could possibly be their reference point for evaluating the relevance of professional courses. Unfortunately, as indicated earlier, the provision of professional courses is too theoretical due to the large class size and other unknown reasons. Thus it is probable that experienced student teachers would have a critical and more conservative appraisal about the relevance of professional courses as opposed to novice student teachers. Yet, in overall perception experienced student teachers were found to have significantly higher rating than novice student teachers. Adams (1981) cited in Hummel and Strom(1987)reported similar finding.

Interestingly, the findings of this study also indicated that there was a statistically significant difference between students' means ratings of relevance and enjoyment, in favor of the former dimension. One could logically argue that making courses to be relevant would result in at least a similar level of interest and enjoyment. It, however, seems a paradox that students did not enjoy professional courses even to the extent that they believed it was relevant. One possible explanation for this could be the role professional courses have in the curriculum of teacher education programs. Research indicates that students tendency to rate different courses differently can be explained by the function the courses serve (Cashin, 1990).

In view of this, students' rating of professional courses enjoyment may be heavily blurred by what these course mean to these students –you are going to be teachers-rather than by the nature of experience they have with these courses. Whatever the reason may be, it is an established fact that students do not have favorable attitude toward

teaching. Students recent resentment behind their degree's label after graduation-B.Ed.-could be an evidence to this assertion.

As to the provision of subject methodology courses, there appears a gap from the basic essence of the course and the course outlines of many departments. It is duly recognized that general professional knowledge has to be followed by subject specific method course in teacher education. In relation to this, Marks (1990:9) has to say:

> Professional and the subject matter courses should be accompanied or followed by required course work in curriculum or methods of teaching in particular content areas. Such methods courses could then deliberately develop pedagogical content knowledge, building on students' knowledge of content and pedagogy.

Underscoring this, Grossman (1989:25) notes that

> Subject specific method of teaching is designed to provide beginning teachers with a perspective on what it means to teach a particular subject, as well as offering specific teaching strategies for that subject. The intent of subject specific courses, then, could be conceptualized as the transmission of pedagogical content knowledge.

On the contrary, the findings of the content analysis of subject methodology courses contents demonstrated wide discrepancy between what the courses ought to be and what they incorporate. Except in the English (76%) and the Amharic (60%) departments, the content of pedagogical content knowledge was underestimated or neglected at all. Only 40% percent of the contents in Chemistry, 33% in Physics and 13% in Mathematics departments are related to pedagogical content knowledge. There are no contents of pedagogical content knowledge in Biology and Geography departments. This might have resulted from lack of appropriate

training in what and how to teach the subjects. Moreover, the extreme emphasis given to general professional knowledge may indicate lack of knowledge on teachers side to distinguish what professional knowledge and pedagogical content knowledge is. Conversations with subject method instructors revealed that many of them are not interested to teach the course for they believe that they don't have the necessary knowledge. The fact that the course outlines of the five departments are devoid of objectives can be an additional but unfortunate witness for either teachers lack of training in the area or lack of interest and commitment to teach the course properly.

How can this variation in the emphasis of general professional knowledge and pedagogical content knowledge among departments be explained? One prevailing fact is variation in the kind of instructors training. Instructors of Amharic and English department are trained in teaching Amharic and English respectively. Consequently, the majority of the contents in subject methodology course outlines were meant for pedagogical content knowledge. The emphasis given for pedagogical content knowledge in the objectives of Mathematics subject methodology course may also be related to the instructor's training (B.Ed. in Mathematics). The instructors in other departments are not trained in teaching their subject matter. They are trained only as subject matter experts, hence minimal attention to pedagogical content knowledge. The findings of this study support the results of Grossman (1989).Though Grossman's study was only on English, variation in pedagogical content knowledge was apparent between teachers trained to teach English and teachers trained in Literature.

Many of the course instructors also noted that they have difficulty in teaching the course and even claim to the extent that the course has to be offered by the pedagogical science department. This claim may also indicate the belief teachers have toward the course - the course is for teaching general professional knowledge.

Finally it seems appropriate to relate students' belief about professional knowledge (general or content specific) with instructors practice. It was noted that due to lack of training on how to teach and the large class size, lecturers both in subject areas and education departments tend to apply methods that are traditional in many circumstances. Students' belief about the relevance of educational courses could come from their experience in colleges. To assert this assumption some students noted that they could not see the relevance of professional courses because even the course instructors and other lecturers do not apply them. In line with this, Ball, cited in McDiarmid (1990:13), states *for many prospective teachers learning means remembering, - - -. Not only did their high school and elementary experience convey this view of learning, but also their experience in college courses in both liberal arts and education confirms it.* This means prospective teachers may continue to regard the way their instructors are teaching as appropriate ways and model and apply the methods used by their instructors. Thus they would teach based on not how they were supposed to teach but on how they were taught by their lecturers. Supporting this, Lortie(1975) cited in Bush (1987:17) asserted that *what students learn about teaching is intuitive and imitative, rather than explicit and analytical; it is based on individual personalities rather than pedagogical principles.* What this means in our context is the practice of instructors in both subject area and professional course works implicitly determines much of how student teachers would teach after graduation rather than teaching learning principles taught in professional courses. Here it is easily visible to everybody what would the effect be in our student teachers as the belief and teaching methods of the majority of lecturers is the antithesis of educational and psychological principles of teaching. This would result in the intent of professional courses to remain in vain and has certainly a lot to imply for teacher education programs.

Despite student teachers conception that professional courses have clear standard and objective, they seem to prefer to be neutral or refrain from agreeing with the relevance and enjoyment of professional courses. This entails the need to make adjustment in the provision of the courses. It is the feeling of the researchers that student teachers have to recognize the requirements of teaching before and while they are taking professional courses. In the present practice it is only during teaching practice that students could see the real challenge of teaching. Teaching practice is conducted at the end of the fourth year. Thus, it is when everything is finalized that student teachers could see what teaching demands, if at all.

In response to this outdated and illogical practice teacher education programs have currently introduced what is termed as "feed forward field experiences"(McDiarmid, 1990). Student teachers are exposed to real classroom conditions before and while they are taking professional courses. Research indicates that this procedure has yielded good results in two areas. Firstly, it would help to clear up students unfounded but widely held initial beliefs that teaching is a task that can be carried out successfully only by acquiring subject matter knowledge. Secondly, students could thoroughly examine what really accounts in teaching and thereby recognize the place of professional knowledge in teaching.

In view of this, it is widely agreed that teacher education institutions need to have thematic areas that could serve as an organizing center to various professional courses. Nowadays it is common to label professional preparation as "Teachers for decision making, Inquiry oriented teacher education, Teachers as leaders, Teachers for problem solving"(Barnes,1987). Despite its vulernability for the critics that it would limit teachers scope in dealing with diverse circumstances, thematic area is found to be effective in enhancing students perception of professional courses relevance and coordinating the work of teacher educators towards a common goal.

And in a situation where students perception toward professional courses is flimsy and the work of teacher educators is fragmented (Teklehaimanot, 2000), it would be mandatory to assign a label for teacher education institutions that fit well with our intent and demand. In our case, "Teachers for problem solving and individualizing" could be considered as a probable tag in light of the objectives set in the New Education and Training Policy.

Teacher educators in their turn have to examine the extent to which their courses promote of teaching competence of students. The contents and objectives of the courses have to be shaped in line with teaching demands. Courses that were mentioned as having less relevance by students have to be adjusted so that they can deal with what students need to have.

Equally important is the need to provide opportunity to practice the science of teaching, to use microteaching and to allow students to teach in real classroom situations. These in turn demand to assign reasonable number of students in a class and to strengthen the meager bridge between teacher education institutions and schools. Unfortunately the number of students in one class usually ranges from 60 to 70 in professional courses, which is well off the number recommended by the Ministry of Education (40). And the total number of students taught by a single instructor ranges from 200-300 which makes the teacher to be preoccupied with routine classroom activities. Worse still, there is only a two – week practice of actual teaching. Thus it is important to reduce the number of students in a class and to lengthen the teaching practice duration. The former measure is by far essential, at least, for courses that presuppose some kind of actual practice. These courses include General Methodology, Curriculum Design, Measurement and Evaluation, and Research in Education. Needless to say the two-week teaching practice is too short to suffice to prepare effective teachers. Yet, it seems an irony that students practice teaching only for two weeks

(maximum of 8 periods) while they are registered to take it by two credit hours, 32 hours. Indeed, students should be given the opportunity to practice teaching in the time allotted for it in the form of peer teaching. Allowing students to do it for two consecutive semesters may also help in lengthening actual teaching practice.

The study also uncovered that the content and objectives of subject methodology courses in many departments fall apart from the intents that they are hoped to serve. The contents and objectives of subject methodology courses have to be re-designed in terms of its purpose. The courses have to commit themselves virtually to the how-to-teach of respective subjects. Besides, it is unquestionable that subject method courses have to be taught by instructors who are specialized in the teaching of that specific subject matter. Nevertheless, there are no higher institutions that train instructors in teaching specific subject except Amharic and English. Thus, it is essential to open programs meant for filling in the gap.

However, it should be duly recognized that preparing good subject methodology course outlines and/or training teachers in the area could not be a sole effort to develop pedagogical content knowledge. Supporting this, Cochran, DeRuiter and King(1993:270) stated that "Because of its integrated nature, PCKg cannot occur only in a separate course." It rather demands continuous micro teaching, team teaching, case studies, field experiences, and hypermedia.

On top of these, attention has to be given to training and recruiting instructors. Instructors in teacher education are expected to teach not only the what of their subject but also the how to teach their subject as well. Given the view that learning of teaching is " intuitive and imitative"(Lortie cited in Bush, 1987:17), it is less probable to convince student teachers to apply the scientific principles of teaching while their instructors (models) are doing in a different, possibly, opposite way. Therefore, for the effective preparation of teachers

what deserves similar consideration with the provision of professional courses is the quest to make instructors methods of teaching in tune with pedagogical principles. Much remains to be done in the preparation of instructors at postgraduate level with regard to professional development. It seems professional development is ignored totally with total 'dedication' to subject area knowledge.

In relation to this, Condon et al (1993) has clearly indicated that the constructionist perspective demands teachers to teach in the way student teachers are expected to teach as observation is one way of constructing meaning. Unfortunately, as indicated in the presentation part , the role models of our student teachers are acting differently from what theory in professional courses is telling them. It is the responsibility of the Ministry of Education and employing institutions, and foremost lecturers in teacher education to listen to and act accordingly to what Cochran, DeRuiter, and King (1993: 267) write

> While a scientists knowledge is structured from a research perspective and is used as a basis for the generation of new knowledge, a science program should facilitate a science teachers' understanding from a teaching perspective so that it can be used as a basis for helping specific students understand specific concepts and learn distinctions between concepts. This differs from a traditional teacher education program where faculty present science, mathematics, English and other content areas in courses isolated or disconnected from the classroom context in which teachers will eventually use them.

Finally, further research seems to be imperative to identify factors that affect students' perception toward professional courses.

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APPENDIX 1

BAHIR DAR UNIVERSITY
FACULTY OF EDUCATION
DEPARTMENT OF PEDAGOGICAL SCIENCES
QUESTIONNAIRE PREPARED FOR 4TH YEAR STUDENTS

The purpose of this questionnaire is to assess students' perception toward professional courses. The information that you provide will be used only for research purpose and is highly confidential. Thus, you are kindly requested to give genuine responses. Please be kind to write your name and identify card number.

With Regards!

Name _____ ID.No. _____

DIRECTION: READ EACH STATEMENT CAREFULLY AND PUT A CIRCLE AROUND A NUMBER THAT YOU THINK REPRESENTS YOUR FEELING.

5- Stands for strongly agree
4- Stands for agree
3- Stands for reservations
2- Stands for disagree
1-Stands for strongly disagree

Professional courses provide a clear idea of where I am going and what is expected of me.	5	4	3	2	1
Professional courses promote the inculcation of right professional attitudes.	5	4	3	2	1
I enjoyed the professional courses that I took.	5	4	3	2	1
The workload in professional courses is too heavy.	5	4	3	2	1
The standard of work in professional courses is easy to know.	5	4	3	2	1
Professional courses will definitely improve my future employment prospects.	5	4	3	2	1
I wish the number of professional courses were minimized.	5	4	3	2	1
There is a lot of pressure as a student in professional courses.	5	4	3	2	1
I can tell easily how well I am doing in professional courses.	5	4	3	2	1
The contents of professional courses seem to be pretty well in line with teaching requirements.	5	4	3	2	1
If I were allowed to make a choice, I would drop professional courses	5	4	3	2	1
Professional courses demand a lot to get through them.	5	4	3	2	1
I usually know the objectives of professional courses right from the beginning.	5	4	3	2	1
I think I could teach very well only with my subject matter knowledge even though I couldn't have taken professional courses	5	4	3	2	1
Professional courses encourage me to develop my own academic interest.	5	4	3	2	1
In exam my mind is preoccupied with professional courses	5	4	3	2	1

- Do you have any teaching experience before you join the college at

  Yes No

  .Elementary level
  .Junior level
  .High school level

- How do you generally find the professional courses in developing your teaching competence?

  a. Very useful B. Useful C. Less useful D. Not useful