Relationship between student teachers' achievement in professional education courses and their achievement in teaching practices

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Professional Education Course (PEC) and Teaching Practice (TP) are two main components in teacher education program. This paper discusses findings of a study to identify the relationship between students' achievement in PEC and their achievement in TP. Grades achieved by the students in PEC and their grades achieved in TP were used and analyzed with permission from the Academic Department of a selected university. The data of 1,888 students were from 28 programs conducted at the university. Spearman's rho correlation via SPSS version 23 was used for data analysis. There were five sub courses under PEC that were analyzed in this study. The analysis found that, only students' achievement in three courses of PEC showed significant correlation with their achievement in TP with correlation indexes in a range of $.046 < r < .088$ at $p \le .05$. It showed that there was a weak significant correlation between students' achievement in PEC and the students' achievement in TP. Students' achievement in the remaining two courses of PEC had no significant correlation with their achievement in TP. Therefore, it can be said that students' achievement in PEC cannot be used as predictor to the students' achievement in TP. However, from random interviews of the students, PEC was said to have positive contribution to them in performing their TP. Further equivalent studies are needed to be conducted in order to get idea on the consistency of the relationship between students' achievement in PEC and their achievement in TP.

Keywords: Professional Education Course, teaching practice, student teachers, teacher education

Introduction

Realizing that the roles of teachers are important in producing future human capital for the nation, the quality of school teachers and teaching profession should frequently be monitored. Teaching profession continuously faces global challenges that need to be rectified. The global challenges are continuously changing in their nature. Therefore effort in preparing future generation who can suit the challenges is mainly of teachers' task and responsibility, besides family, members of society and government. Therefore teachers

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should possess firm criterions relevance with the task and responsibility (Goh & Wong, 2015; Goh & Wong, 2014). The challenges in responding this responsibility require teachers to constantly equip themselves with the necessary knowledge, skills, and competencies. For that purpose, teacher education program should also frequently be viewed from time to time to monitor its relevance.

Students with teaching as their specialization in higher learning institutions, must undergo certain education courses conducted by the institutions for their professional development. Basically the professional courses for the development include theoretical courses as well as practical courses. This paper discusses findings of a study aims to identify whether students' achievement in theoretical courses do have any significant relationship with their achievement in the respective practical course in the program. This case study embarked on teacher education program in a selected education university. The significance of the study is for policy makers in teacher education as well as for teacher educators and for those who involve in education especially in teacher education institutions in the form of relevance information.

Background of the study

Fundamentally in teacher education program, the exposure given is to develop student teachers professionalism that includes their professional knowledge, attitudes, behaviors and skills. Commonly there are two models of teacher education namely consecutive model and simultaneous model. In consecutive model, student teachers first obtain content knowledge of subject specialization followed by additional courses that focus on knowledge, skills values in teaching. In concurrent model, student teachers study simultaneously both academic subject (content knowledge) and relevant courses which lead to teaching ways of the subject. Various measures, approaches and strategies are taken to develop such demand. Generally, student teachers are exposed theoretically with courses of their specialized subject or content knowledge; general pedagogical knowledge; and pedagogical content knowledge of the subject followed by practical in micro or macro teachings laboratory which are conducted at their teacher education institution and teaching practice at a selected school with real and natural environment.

According to Furlong (2000), it is believed that there is a strong relationship between students' achievement in theoretical part courses and students' performance in the practical part. A study conducted by Norila Md. Salleh (2006) also shows student teachers have confidence that theoretical knowledge that they learn in their lecture halls has the ability to contribute to their performance in their practical teaching when they are at school for their TP. In TP student teachers do not only learn to practice what they have learnt, but they also have to adapt themselves to a real school-working environment.

In the university where this study is done, teacher education programs consists of six components of courses namely Professional Education Courses (PEC), University Courses (UC), Specialties Major (SM) and Minor Courses (SC), Teaching Practice (TP) and Co-curriculum Courses. Students in the program must pass the courses in order to qualify them to be teacher. PEC is a component of courses which expose student teachers with foundation knowledge in education related aspects namely philosophy of education, history of education, educational psychology, technology in education, sociology of education, pupils assessment and pedagogy or method of teaching.

Table 1 is an example of courses in PEC (base on the university selected for this study). Students must follow through all courses in PEC respectively as in Table 1 because it is believe that all the courses in PEC are interrelated to each other. There are all six courses with 24 credit hours allocated for PEC out of 128 credit hours for overall of one certain

course program specialization. This shows that PEC gives about 18.75% contribution to the overall teacher education program in form of credit hour. Therefore the contribution should be significant. It is believed that there is a strong relationship between students' achievement in PEC and students performance in TP (Aminah Ayob, 2007). Student teachers must follow through all courses in PEC except KPR3062, before they can go for their TP except KPR3062 before they are qualified to go for TP. KPR3062 is to be taken after they have come back from TP because it is a reflection of teaching practices.

Table 1: Code and name of courses under PEC

No.	Course Code	Course Name	Credit Hour
1	KPF3012	Education in Malaysia: Philosophy and Policy	2
2	KPS3014	Classroom Learning Management	4
3	KPP3014	Students' Development Management	4
4	KPD3016	Teaching, Technology and Assessment 1	6
5	KPD3026	Teaching, Technology and Assessment 2	6
6	KPR3062	Reflection	2
		Total Credit Hour	24

Figure 1 shows the interrelationship between courses in PEC and TP. KPR3062 is only to be taken after the student teachers have come back from TP.
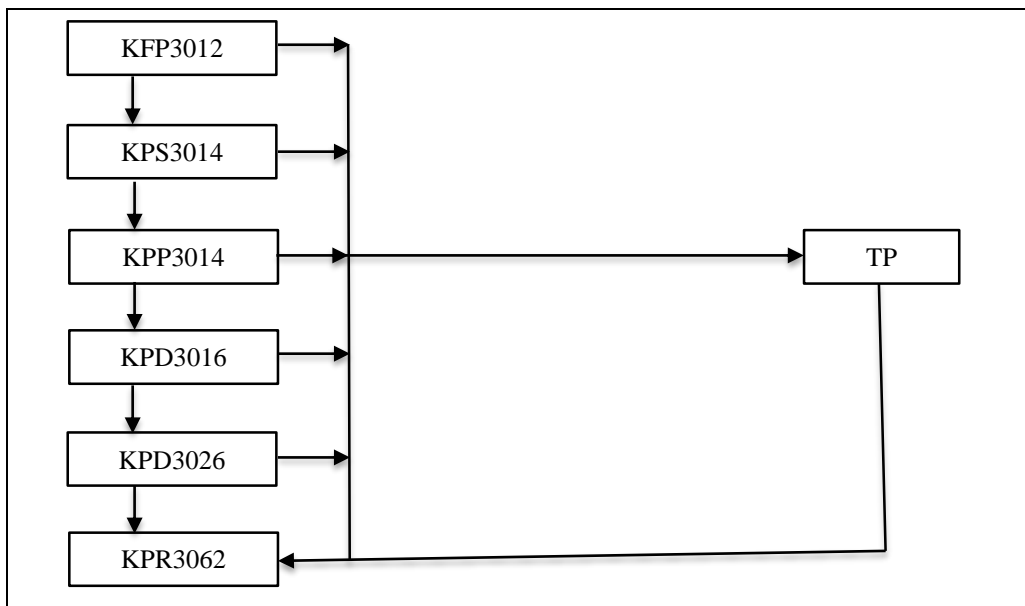

Figure 1: Interrelationship between courses in professional education course and teaching practice

TP is a program of 16 weeks in selected schools with a lecturer as a supervisor and a teacher as a cooperating teacher (Center of Teaching Practice and Industrial Training, 2013). In TP student teachers can apply and extend their knowledge of teaching and learning. Student teachers are observed several times by a nominated supervisor as well as a cooperating teacher. TP is a culminating phase for teacher candidates in teacher education program. The term practicum is also well versely used for TP. In this study, TP carries 8 credit hours or 6.25% contribution to one certain course program specialization. TP takes a semester and students must pass TP at minimum B grade before they can pass teacher education program. A study done by Norila Md Salleh & Ikhsan Othman (2016) shows that the cooperation and support received by student teachers from their cooperative teachers and school authorities are excellent and encouraging.

Problem statement

Studies which have been conducted show that the beginning years of beginning teachers is a difficult period (Mohd Hasani Dali & Ulaganathan Shanmugam, 2005; Nabilah Abdullah & Nurshamsida Md Shansuddin, 2011). Further research also shows that experienced teachers still face problems in their career (Eftah Moh @ Abdullah & Izazol Idris, 2014; M Jaya Adi Putra, Neni Hermita & Wahyu Sopandi, 2014; Sazwani Suhaimi, Noor Shah Saad & Sazelli Abd Ghani, 2011). The problems faced by the teachers should be resolved and one of the possible action was to ensure student teachers acquire adequate exposure about the real situation in the education world. Therefore studies to identify whether students' achievement in theoretical courses do have any significant relationship with their achievement in the respective practical course of their learning are undeniably required and important.

In the university (university involved in this study), it has not been studied regarding the relationship between students' achievement in PEC and students' achievement in TP since the last study by Aminah Ayob (2007). Furthermore, the last study was only on previous PEC, which had been restructured in 2008. The situation might have changed. Therefore this study on the current PEC is considered as necessary and relevant. The aim of this study is to identify whether students' achievement in PEC has any relationship with students' achievement in TP.

Research objectives

The objectives of this study are as follows:
  i.   To identify whether students' achievement in KPD3016 has any significant relationship with their achievement in TP.
  ii. To identify whether students' achievement in KPD3026 has any significant relationship with their achievement in TP.
  iii. To identify whether students' achievement in KPF3012 has any significant relationship with their achievement in TP.
  iv. To identify whether students' achievement in KPP3014 has any significant relationship with their achievement in TP.
  v.   To identify whether students' achievement in KPS3014 has any significant relationship with their achievement in TP.
  vi. To identify students' view on the contribution of courses under PEC in performing their TP.

Research questions

This study is aimed towards answering the following questions:
  i.   Is there any significant correlation between students' achievement in KPD3016 and students' achievement in TP?
  ii. Is there any significant correlation between students' achievement in KPD3026 and students' achievement in TP?
  iii. Is there any significant correlation between students' achievement in KPF3012 and students' achievement in TP?
  iv. Is there any significant correlation between students' achievement in KPP3014 and students' achievement in TP?
  v.   Is there any significant correlation between students' achievement in KPS3014 and students' achievement in TP?
  vi. What are students' views on the contribution of courses under PEC in performing their TP?

Null hypotheses

The null hypotheses to be tested are as follows:
  Ho(1):   There is no significant correlation between students' achievement in KPD3016 and students' achievement in TP.
  Ho(2):   There is no significant correlation between students' achievement in KPD3026 and students' achievement in TP.
  Ho(3):   There is no significant correlation between students' achievement in KPF3012 and students' achievement in TP.
  Ho(4):   There is no significant correlation between students' achievement in KPP3014 and students' achievement in TP.
  Ho(5):   There is no significant correlation between students' achievement in KPS3014 and students' achievement in TP.

Methodology

This study is mainly on document analysis that is an analysis on student teacher achievement grade. Therefore it is considered as an ex-post facto study. Ex-post facto study is more on documents analysis (Carlos Nunes Silva, 2013; Mohamad Najib Abdul Ghafar, 1999). Grades of students' achievement in courses PEC and TP are taken as the research data. The data are collected with permission from academic department of the university. Based on theory, correlation study can be used as a method of relationship between one phenomenon to other (Wiseman, 1999). Correlation coefficient between two sets of data can be calculated with Pearson correlation or Spearman's rho correlation. Since the collected data in this study is in the form of achievement grades or rank data, analysis using Spearman's rho correlation is more suitable to suit the purpose (Coakes & Steed, 2003 & Wiseman, 1999).

Grades or grade points achieved by student teachers in PEC and grades achieved by students in TP were used in the analysis. Overall 1,888 student teachers were from 28 teacher education specialization programs in the selected university. The students were 483 (25.58%) male and 1,405 (74.42%) female. From all the students involved, a number of 231 (12.2%) students were from the Malaysian Studies specialization program; 200 (10.6%) students were from Malay Language Studies specialization program; 198 (10.5%) students were from History Education Studies specialization program; and 10 (0.5%) students were

from Sports Science Studies specialization program.

In the analysis, the null hypotheses were tested with the inferential statistic Spearman's rho correlation to suit the purpose. Illustration in Table 2 is based on Wiseman (1999). Such categories of correlation with its correlation coefficient value were used as a reference in this study.

Table 2: Coefficient correlation table (based on Wiseman, 1999)

Coefficient Correlation (r)	Correlation Category
1.00	Perfect
0.70 - 0.99	High
0.30 - 0.69	Medium
0 - 0.29	Low

Findings

Spearman's rho correlation via SPSS version 23.0 was used to analyze the data collected to test the stipulated null hypotheses. Table 3 shows the result of the analysis.

Table 3: Correlation between students' achievements in PEC and students' achievement in TP

N=1,888		KPD 3016	KPD 3026	KPF 3012	KPP 3014	KPS 3014	TP
KPD3016	r	1.000	.202*	.083*	.075*	.036	**.064***
	sig.	-	.000	.000	.001	.114	.002
KPD3026	r		1.000	.126*	.072*	.100*	**.088***
	sig.		-	.000	.002	.000	.000
KPF3012	r			1.000	.197*	.095*	.002
	sig.			-	.000	.000	.946
KPP3014	r				1.000	.081*	**.046***
	sig.				-	.000	.045
KPS3014	r					1.000	.036
	sig.					-	.115

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Relationship between students' achievement in KPD3016 and their achievement in TP

Research question (a): Is there any significant correlation between students' achievement in KPD3016 and students' achievement in TP?

Ho(1): There is no significant correlation between students' achievement in KPD3016 and students' achievement in TP.

By referring to Table 3, the calculated Spearman's rho correlation coefficient is r = .064, p =

.006 at p ≤ .05. Therefore Ho(1) which says that there is no significant correlation between students' achievement in KPD3016 and students' achievement in TP is rejected. Alternatively there is a significant correlation between students' achievement in KPD3016 and students' achievement in TP. Anyway the significant correlation coefficient between students' achievement in KPD3016 and students' achievement in TP is low (Wiseman, 1999). Therefore it can be concluded that there is a weak relationship between students' achievement in KPD3016 and their achievement in TP.

Relationship between students' achievement in KPD3026 and their achievement in TP

Research question (b): Is there any significant correlation between students' achievement in KPD3026 and students' achievement in TP?

Ho(2): There is no significant correlation between students' achievement in KPD3026 and students' achievement in TP.

By referring to Table 3, the calculated Spearman's rho correlation coefficient is r = .088, p = .000 at p ≤ .05. Therefore Ho(2) which says that there is no significant correlation between students' achievement in KPD3026 and students' achievement in TP is rejected. Alternatively there is a significant correlation between students' achievement in KPD3026 and students' achievement in TP. Anyway the significant correlation coefficient between students' achievement in KPD3026 and students' achievement in TP is low (Wiseman, 1999). Therefore it can be concluded that there is a weak relationship between students' achievement in KPD3026 and their achievement in TP.

Relationship between students' achievement in KPF3012 and their achievement in TP

Research question (c): Is there any significant correlation between students' achievement in KPF3012 and students' achievement in TP?

Ho(3): There is no significant correlation between students' achievement in KPF3012 and students' achievement in TP.

By referring to Table 3, the calculated Spearman's rho correlation coefficient is r = .002, p = .946 at p ≤ .05. Therefore Ho(3) which says that there is no significant correlation between students' achievement in KPF3012 and students' achievement in TP fail to be rejected. Therefore it can be concluded that there is no significant relationship between students' achievement in KPF3012 and their achievement in TP.

Relationship between students' achievement in KPP3014 and their achievement in TP

Research question (d): Is there any significant correlation between students' achievement in KPP3014 and students' achievement in TP?

Ho(4): There is no significant correlation between students' achievement in KPP3014 and students' achievement in TP.

By referring to Table 3, the calculated Spearman's rho correlation coefficient is r = .046, p = .045 at p ≤ .05. Therefore Ho(4) which says that there is no significant correlation between students' achievement in KPP3014 and students' achievement in TP is rejected. Alternatively there is a significant correlation between students' achievement in KPP3014 and students' achievement in TP. Anyway the significant correlation coefficient between students' achievement in KPP3014 and students' achievement in TP is low (Wiseman,

1999). Therefore it can be concluded that there is a weak relationship between students' achievement in KPP3014 and their achievement in TP.

Relationship between students' achievement in KPS3014 and their achievement in TP

Research question (e):   Is there any significant correlation between students' achievement in KPS3014 and students' achievement in TP?

Ho(5):   There is no significant correlation between students' achievement in KPS3014 and students' achievement in TP.

By referring Table 3, the calculated Spearman's rho correlation coefficient is $r = .036$, $p = .115$ at $p \leq .05$. Therefore Ho(5) which says that there is no significant correlation between students' achievement in KPS3014 and students' achievement in TP fail to be rejected. Therefore it can be concluded that there is no significant relationship between students' achievement in KPS3014 and their achievement in TP.

What are students' views on the contribution of courses under PEC in performing their TP?

Random interviews were done to the students whose their achievement in PEC was taken for the analyses in this study. The followings are among the statements given by the students in the interviews.

> "Actually professional courses (PEC) taught in this university is very important in performing TP especially to prospective teacher."
>
> (P48525)

> ". , , professional courses (PEC) are very important and contribute significantly to teacher trainees for teaching in schools."
>
> (P48586)

> ". , , I can practice what I did study in my previous six semesters in this university and when I went for my TP, I have opportunities to apply the knowledge. I can get along with teachers at the school especially with more senior teachers."
>
> (P48580)

> ". , , This course (KPD3026) is very important for students who will go for Teaching Practice because they were trained in how to teach through microteaching and macroteaching. Students will be assessed and guided by their lecturer to see if they have problem. Students will also be able to trained themselves to be brave and confident for their Teaching Practice. "
>
> (P48504)

Generally the students said that what they have learnt in the courses under PEC gave meaningful contribution in performing their TP.

Other result from the analysis

As mentioned in Table 1, there are altogether six courses under PEC component of courses. By referring to Table 3, there are also results that show the inter-correlation between courses in PEC:

- There is significantly weak relationship between student teachers achievement in KPD3016 and KPD3026 (r = .202, p = .000).
- There is significantly weak relationship between student teachers achievement in KPD3016 and KPF3012 (r = .083, p = .000).
- There is significantly weak relationship between student teachers achievement in KPD3016 and KPP3014 (r = .075, p = .001).
- There is no significant relationship between student teachers achievement in KPD3016 and KPS3014.
- There is significantly weak relationship between student teachers achievement in KPD3026 and KPF3012 (r = .126, p = .000).
- There is significantly weak relationship between student teachers achievement in KPD3026 and KPP3014 (r = .072, p = .002).
- There is significantly weak relationship between student teachers achievement in KPD3026 and KPS3014 (r = .100, p = .000).
- There is significantly weak relationship between student teachers achievement in KPF3012 and KPP3014 (r = .100, p = .000).
- There is significantly weak relationship between student teachers achievement in KPF3012 and KPS3014 (r = .095, p = .000).
- There is significantly weak relationship between student teachers achievement in KPP3014 and KPS3014 (r = .081, p = .000).

Summary of the findings

The aim of this study is to identify whether students' achievement in PEC has any relationship or correlation with students' achievement in TP. The findings of the study show that only students' achievement in three courses of PEC show significant correlation with the achievement in TP. The three courses are KPD3016 (Teaching, Technology and Assessment 1), KPD3026 (Teaching, Technology and Assessment 2) and KPP3014 (Students' Development Management). Anyway the value of coefficient correlation base on the analysis done, is in the range .046 < r < .088, which is low as referred to Table 2. It shows that there is a very weak significant relation between students' achievement in PEC and the students' achievement in TP. Students' achievement in other courses of PEC namely KPF3012 (Education in Malaysia: Philosophy and Policy) and KPS3014 (Classroom Learning Management) have no significant correlation with their achievement in TP. In general, it can be summarized that students' achievement in PEC cannot be used as predictor to the students' achievement in TP as they have no significant correlation between them. For inter-correlation achievement between courses under PEC; generally there is significantly weak inter-correlation or weak interrelationship between one course to the other. For KPD3016 and KPF3014, there is no significant correlation between them.

From interviews in this study, the interviews show that there is a great and meaningful contribution of PEC to the performing of TP among students. For example through PEC students are trained to be brave and confident for their Teaching Practice. Conversely TP gives opportunities for students to apply skills and knowledge that are acquired in PEC.

Discussion and conclusion

The first part of the findings in this study, that is the analysis of the relationship between PEC and TP contradicted with former studies on students of the same university done by Aminah Ayob (2007). The findings of that study show that there is contribution of PEC to TP. Anyway such study was on the old PEC courses that was been changed in 2008. Therefore, new changes might have contributed to the difference of the findings in this study.

Furthermore the finding of the analysis also contradicted with Furlong (2000) and Norila Md. Salleh (2006) who outlined that there is a strong relationship between students' achievement in theoretical part and students' performance in the practical part of their studies in teacher education program. As time goes by and relevant changes are done, it should be noted that recent finding might show different results.

Results from interviews show that there is a great and meaningful contribution of PEC to the performing of TP among students. In relation with that, teaching and learning of the courses in PEC should be continued as it exposes student teachers with basic and general knowledge in teaching profession. Anyway it should be enhanced to give more positive contribution or impact on TP. This scenario might also be seen as opportunities for teacher educators to break from the past and reformulate new methods, investigate and explore new ways of doing things such as new approach of teaching or lecturing (Goh & Wong, 2015). Alternatively, TP should also be restructured for enhancement in such a way to give student teachers opportunities to practice what ever have been learnt in PEC in a spirit of facilitating student teachers to become beginning teachers with the required knowledge, skills and competencies.

Further equivalent studies are still needed. This study was conducted only on a selected teacher training university. Other studies from other teacher training institutions; and other study on other cohorts of students are recommended be provide consistency of the results.

Acknowledgements

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