Professional Development Schemes and Content Knowledge Practices of Academic staff in CHUSS and COVAB at Makerere University

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Abstract
The study examined the extent to which Professional Development Schemes influence content knowledge practices of academic staff in CHUSS and COVAB at Makerere University. The study objective was derived using the Adult Learning and Situated Learning theories. The study employed an embedded research design with a dominant quantitative and minor qualitative approaches. The study respondents comprised of academic staff, academic administrative staff, administrative staff (University Management), and undergraduate students in CHUSS and COVAB at Makerere University. These were sampled using stratified and purposive random sampling. Data were collected using a survey questionnaire, interview guides, observation checklists, and documentary review. Quantitative data was analyzed using means and standard deviations at descriptive level. The study hypothesis was analyzed using Simple Linear Regression and Pearson Correlation Co-efficient analysis method while qualitative data was thematically analysed. Findings showed that PDS significantly influence content knowledge practices of academic staff. On the basis of this evidence, it was concluded that PDS significantly influence content knowledge practices of academic staff. It was hence recommended that the Directorate of Human Resources should offer continuous need-based PDS laying emphasis on practices that address content focus, active learning, coherence, and collective participation in a bid to improve on content knowledge practices of academic staff.

Key words*. Professional development schemes (PDS), content knowledge practices and academic staff.*

I.   Introduction
Globally many countries, like USA, Australia, Canada, UK, Ireland, Nordic countries, Netherlands and Belgium have already established institutional practices aimed at improving the quality of teaching and learning in the field of higher education. However, this is slightly different from higher educational institutions in the world[1,2,3,4,5]. Specifically, the European University Association[6], revealed that for the past 20 years, the Bologna Process has been promoting the enrichment of learning and teaching, with ministers committing themselves in the 2018 Paris Communique` to promote and support institutional, national and European initiative for pedagogical training. Furthermore, the process aimed at ensuring continuous professional development of higher education lecturers and explore ways for better recognition of high quality and innovative teaching in their career with a deep emphasis on pedagogical practices as a key aspect of teaching and learning[6]. Besides this intervention was for European countries which have well established higher education systems differing from those of African contexts specifically Makerere University in Uganda where this current study was done.

Higher education institutions engage in advancing good teaching with emphasis on content knowledge pedagogical practices of academic staff for various reasons. First and foremost, they pay more attention to demonstrating that they are consistent providers of quality higher education, while serving a multitude of stakeholders with diverse expectations[7]. Also they are mandated to respond to the increasing demand for purposeful and relevant content[8]. Likewise, students as well as employers and policy makers want to assure that education would prepare students for rewarding employment and for professional growth over a lifespan which depends on the nature of content knowledge that academic staff expose them to[7]. Alternatively, these were all strong arguments in favour of content knowledge practices of academic staff, but they were not established using an empirical study based on PDS influence as was the case in this current study.

African Universities are encountering a plethora of challenges which among others include academic staff who are not well tutored in university pedagogy and andragogy[9]. In addition, African universities suffer from a shortage of qualified academic staff and high student-teacher ratios, thus effective faculty and staff

development is critical to improving institutional capacity[10]. The implication of this was that even content knowledge pedagogical practices in teaching and learning was not effective enough. Whereas Mendonca[11] showed content knowledge pedagogical challenges among university lecturers in Mozambique universities. Lecturers were presented as lacking ownership of the curriculum and the instructional approaches used were insufficient. Thus students have highly criticized this curriculum and the instructional approaches that do not promote the aspect of competitiveness. Such a curriculum was identified as far distanced from the real life of citizens. However, pedagogical revival in Africa has shown that the conventional teaching practices are prevalent in many higher education institutions including universities. Such practices are always interpreted as teacher centered, lecture-driven, rigid and authoritarian in nature. Students are viewed as a tabula rasa with no role to play during the teaching and learning process. In addition, student activities are limited to memorizing facts and reciting them to the teacher[12]. It was hence relevant to ascertain how PDS influence academic staff content knowledge practices in the College of Humanities and Social Sciences (CHUSS) and College of Veterinary Medicine, Animal Resources and BioSecurity (COVAB) at Makerere University in Uganda.

The study was anchored on two theories, for instance, the Situated Learning and Adult Learning theories. The Situated Learning Theory was developed by Lave and Wenger[13]; Fincham, Clark, Handley and Sturdy[14]. Situated learning is generally understood as the learning that occurs when the learner sets out to acquire the necessary skills, knowledge, and attitudes that will enable him/her to be part of a community of practice[15]. This community of practice might be domestic, social, or vocational. This theory postulates that learning represents the acquisition of objective knowledge. Further, it states that learning is best achieved during educational training/sessions that are separate from the settings in which learning would be applied. It considers learning and knowing as processes which are embedded to every day practice in work place, family and social settings. According to Lave and Wenger[13], this theory is premised on three core issues namely; participation, identity and practice. Participation requires one to understand, take part and subscribe to social norms, values and behaviours of the community they participate/operate. This is what Lave and Wenger[13] describe as legitimate peripheral participation, which: provides a way to speak about relations between newcomers and old-timers, and about activities, identities, artefacts and communities of knowledge and practice. It concerns the process by which newcomers become part of the community of practice. And person's intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a sociocultural practice. This social process includes, indeed it subsumes, the learning of knowledgeable skills[16].

Meanwhile, identity is concerned with developing new ways of knowing in practice but also with understanding who we are and what potential we have. The third concept in situated learning is practices which is a social practice that provides structure and meaning of what we do. It always builds in a social, historical context and relates with the use of language, role definitions, behavioural scripts and other explicit artefacts. Lave and Wenger argue that learning is situated; that is, learning is grounded in the actions of everyday situations. At the same time learning is not separated from the world of action but exists in robust, complex, social environments made up of actors, actions, and situations. Lave and Wenger call this a process of "legitimate peripheral participation"[16].

In line with this theory, effective teaching and learning in form of content knowledge practices was deemed possible through training of academic staff laying emphasis on content focus, active learning, coherence, collective participation and duration as key components of professional development schemes. Once these are put into consideration, academic staff content knowledge practices improve. The theory of situated learning is often criticised for its inability to be generalised because of the particularity of the context and the uniqueness of the context's role in shaping the learning. With this weakness it was prudent for this current study to be anchored by a second theory differing from the context uniqueness of situated learning theory.

The Adult Learning Theory of andragogy developed by Malcom Shephard Knowles in 1968 was the second theory that guided the study. It is based on five assumptions for instance; self-concept, past learning experience, readiness to learn, practical reasons to learn and driven by internal motivation. The first assumption of self-concept states that adult learners have more self-concept than children thus they should directly take part in their learning. The second assumption is that past learning experience which postulates that adults have a vast array of experiences to draw on as they learn as opposed to children who are in the process of gaining new experiences. The third assumption is that of readiness to learn which assumes that many adults have reached a point in which they see the value of education and that they are ready to be serious and focused on learning. The fourth assumption is that of practical reasons to learn which states that adults are looking for practical, problem based approaches to learning. Hence, many adults return for continuous professional development for specific practical reasons such as entering a new field of work. Finally, this theory assumes that adult learners are driven by internal motivation. Basing on this Adult Learning Theory, it was assumed that academic staff engagement in professional development schemes is based on their self-concept as they feel more secure participating in them. Also they decide to engage in professional development schemes based on their past experience in the profession that drastically changes now and again in terms of content knowledge practices they are mandated to

deliver. Thus, they are ready to learn and acquire new content knowledge practices that are highly demanded on the job market.

Statement of the Problem

University lecturers are expected to have adequate content knowledge in the execution of their teaching obligations. This is realised when academic staff have masterly of what they teach, and are up to date in terms of content they offer to learners. In line with policy frameworks, like teaching and learning policy, ICT policy, Makerere University came up with strategies like offering pedagogical training, recruiting competent academic staff with PhDs, offering tuition waivers to academic staff without PhDs among others. However, there are serious deficiencies in content knowledge practices among academic staff in the execution of their duties. This was manifested in reports and Authorities like[17,18,19,20,21,22,23,24,25,26] (Mamdan[17], Mak Teaching and Learning Policy[18], Ssentamu[19], Ezati et al.[20], Nakabugo[21], Ezati et al.[22], Ssempebwa, Teferra & Bakkabulindi,[23] Nabaho, Aguti & Oonyu[24], Rwendeire Report[25], NCHE[26]) who identified serious deficiencies in content knowledge practices and masterly among academic staff in Makerere University. For instance, some lecturers in Makerere were identified as lacking adequate knowledge of what they teach[24]. This scenario once left to continue the way it is might create failure to achieve the National Vision 2040 and National Development Plans III which emphasize national transformation, innovations and development geared towards moving Uganda from a low income status to a middle income state. Although several factors might be partly responsible for failure by academic staff to effectively use appropriate content knowledge practices, literature to date shows that a few studies have been conducted on content knowledge practices of academic staff but do not show the extent to which professional development schemes influence academic staff content knowledge practices in the context of Makerere University which this study did. Therefore, findings in this study would inform and have implications on the earlier Makerere university teaching and learning policy and the new ICT policy and later on to teaching and learning policies of other universities in Uganda.

Purpose of the study

The purpose of this study was to examine the influence professional development schemes on academic staff content knowledge practices in CHUSS and COVAB at Makerere University.

Materials

In this section literature related with the study objective was offered, that is the influence of professional development schemes on content knowledge practices.

Influence of professional development schemes on content knowledge practices of academic staff.

Literature on PDS and content knowledge pedagogical practices of academic staff identified in the current study included Liu and Liao[27] study professional development and teacher efficacy using descriptive results revealed that professional development of teachers improved their knowledge, curriculum in the discipline significantly. However, the current study was highly inferential in nature involving the use of Pearson's Correlation and Regression analysis which was not the with the earlier reviewed study.

Empirically, Kafyulilo[28] studied professional development through teacher collaboration as an approach to enhance teaching and learning in Science and Mathematics in Tanzania. Findings revealed that teachers' collaboration as an approach to professional development schemes enhances effectiveness of teachers masterly of content and following the curriculum as expected in science related disciplines. Teachers are the ones who implement the curriculum by selecting and combining the various aspects of knowledge contained in the curriculum or syllabus document. Hence they ought to be acknowledged and acquainted about the components of curriculum content and the different ways through which the curriculum content can be effectively delivered to learners. Slightly differing from the current study, this collaborative PD practice was not the only aspect of PDS considered in the current study paving way for active learning, content focus, participation and duration influence to be considered in this current study.

Still, Curwood[29] studied continuity and change identities and narratives within professional development of teachers. Findings revealed that the traditional forms of professional development did not allow space for teachers' narratives. Hence the traditional professional development was ineffective at engaging teachers as learners, promoting critical reflection or encouraging new understandings about content and pedagogy. This study was carried out in the foreign world context differing from the current study which focused on Makerere University in Uganda.

Meanwhile, Garet, Porter, Desimone, Birman and Yoon[30] studied what makes professional development affective and revealed that there were significant effects on teachers self-reported increases in training knowledge acquired from development activities focusing on content knowledge, opportunities for active learning and coherence with other learning activities on knowledge of content required during

instructional process. Similarly, Darling-Hammond, Hyler and Gardner[31] revealed that content focused PD generally treats discipline specific curricula such as Mathematics, Science and Literacy provide teachers to study their students work, test out new curriculum with students or a study of a particular element of pedagogy or student learning in the content area. However, this PDS practice was on mathematics teachers and mathematics content knowledge as opposed to this current study which covered teachers in COVAB and CHUSS where subject areas vary.

Meanwhile, Driel and Berry[32] (2012) studied teacher professional development focusing on pedagogical content knowledge and in a desktop review of literature revealed that professional development programs aimed at development of teachers' PCK cannot be limited to supplying teachers with input such as examples of expert teaching of subject matter. Instead, such programs should be closely aligned to teachers professional practice. Whereas, Kultsum[33] studied the concept of pedagogical content knowledge among English teachers in Indonesia and revealed that the training offered to teachers had not fully equipped them with pedagogical content knowledge that would allow them excellently teach learners. However, some few teachers who attend PDS had acquired PCK that led them in solving students' misconceptions about the subject that they learn. However, this study was carried out in Malaysia while this current study was in Makerere University in Uganda.

Studies into teaching and teacher education suggest that teacher knowledge is closely related to teachers' experiences and contexts and includes teachers' knowledge about the content and beliefs about their own teaching practice[34]. Baiku, Demas, Woldekawariat, Gatahun and Mekonnen[35] studied the effect of teaching without pedagogical training in St. Paul's hospital millennium college, Addis Ababa and with use of a semi-structured open-ended items to collect qualitative data which was analysed using thematic analysis technique. Findings obtained revealed that most instructors practiced their personal teaching methods which was huge, with no lesson plan, no clear objectives, poor time management and overlapping content. Besides this study was majorly qualitative while this current study used some quantitative information.

Shah, Madhavaram and Laverie[36] in a theoretical study established that faculty need to be able to understand and present subject matter knowledge using theories conceptual frameworks and analytical skills. However, the extent to which this is true on academic staff is not empirically established using PDS as a predicting variable. In addition, Emily, Allen and Gregory[37] revealed that engaging in professional development programs can provide opportunities for faculty members to learn from each other through the establishment of networks that encourage and support sharing of knowledge, ideas and resources. In so doing, teachers content knowledge in the discipline enhances. However, this study did not have Situated Learning Theory.

Penuel, Sun, Frank and Gallagher[38] showed that a well-designed professional development can change teacher knowledge and practice. Professional development enhances teacher knowledge and improves practice when sustained over it enhances teachers' knowledge of the curriculum implementation. Normally, active learning PDS enables teachers to master what they are supposed to offer to learners. However, this was a theoretical review while the current study was empirical in nature. Meanwhile, Vanassche and Kelchtermans[39] showed that professional development aims at a more refined and effective repertoire of educational practices and strategies as well as a more grounded (validated) knowledge based teacher educated, professional responsivities and situation. Whereas, Svendsen[40] indicated that collaborative countries professional development approaches are effectives in bringing about positive changes. These earlier reviews suggested gaps in the sense that they were not empirically established with methodologies like the ones this current study undertook in the realm of academic staff in a university setting.

II.   Methodology

The study employed an embedded research design with a dominant quantitative and minor qualitative approaches. Its respondents comprised of academic staff, academic administrative staff, administrative staff and undergraduate students in CHUSS and COVAB at Makerere University, the pioneer and flagship University in Uganda. This current study was carried out in the period between 2018- 2021. Study respondents (academic staff/lecturers) were determined using Krejcie and Morgan 1970 Table for Sample Size Determination and sampled using stratified and purposive random sampling. Data were collected using a survey questionnaire, interview guide, focused group discussion guide and observation guide for academic staff in CHUSS and COVAB. At descriptive level, data was analyzed using, means and standard deviations. The study objective was analyzed using Simple Linear Regression and Pearson Correlation Co-efficient techniques.

III.   Results

In this section descriptive results on professional development practices, content knowledge practices, and testing of the study hypothesis are offered.

Table 1: Means and Standard Deviation of academic staff on PDS

Items on PDS	Mean	Std. Dev
In my department new academic staff are assigned at least one senior colleague for teaching and learning mentorship	3.43	0.954
It is easy for me to obtain financial support from the university to attend international teaching and learning conferences/ pedagogical training conferences	3.37	0.809
In my department, every newly appointed academic staff works hand in hand with colleagues for teaching and learning mentorship	3.15	0.95
Prior to my lectures in a semester, I look for literature/ content that would add value to course content	2.82	1.143
I invite a colleague atleast once in a semester to observe me while teaching to get feedback and improvement purposes	2.25	1.008
I am invited by a colleague at least once in a semester to observe him/her while teaching for feedback and improvement purposes	2.47	1.22
I make an effort at least once in a semester to seek consent from a colleague to observe them while teaching to improve on my teaching and learning	2.89	1.09
Content selection in PDS follows critical areas in my area of specialization	3.10	1.17
Content selection followed in PDS meets training needs of academic staff	2.91	1.17
Content followed in PDS is varied across topics I teach	2.91	1.17
There is a strong link between the content offered in PDS and what I teach	3.39	1.03
I received an invitation from the university directorate of human resources to attend atleast one teaching and learning seminar/ conference or workshop in academic year	3.39	1.26
I am invited at least once in an academic year to attend a MUELE training	3.52	1.26
I am invited by the department at least once in academic year to attend an AIMS training	3.48	1.078
The directorate of human resources organises teaching and learning seminars for academic staff (pedagogical training courses at least) in academic year	2.65	1.094
There is a policy recommending collective participation in PDS	3.07	1.10
I receive invitations to participate in PDS organized in my department	3.16	1.07
My department inducts newly appointed staff as a way of preparing them for teaching and learning activities	2.83	1.101
I am consulted to contribute towards professional development organized in my college	3.08	1.06

Source: Primary data

The mean values on professional development schemes revealed that almost all the means were slightly below code 3 = non-committal on the Likert scale that was used. This meant that there was a moderate rating on PDS. This meant that the university to some extent ensures that PDS are organized in the university. The standard deviations on all items were low implying that respondents had similar views and opinions regarding offering PDS in the university.

Descriptive Results on Content Knowledge Practices (CKP)

Table 2: Frequencies, Percentages, Means of academic staff on Content Pedagogical Practices

Indicators of content pedagogical practices	Mean	Std. Dev
When preparing the course content that I teach, I consider the course objectives	4.33	0.614
The course structure guides me in developing the course content (e.g. following scope, sequence, etc.)	4.37	0.658
For every topic/ content I teach, I select appropriate reading materials (references guided by course objectives	4.31	0.645
Before I teach a given topic/ content, I do adequate research around it (e.g. using journal articles, textbooks, etc.)	4.30	0.643

Source: Primary Data

Table 2 shows that almost all the means were equal to code 4 = agree on the Likert scale that was used in the study. This suggested that academic staff had relevant content knowledge practices. On the other hand, the standard deviations were all low suggesting that respondents had similar views and opinions regarding content knowledge practices

Testing of the study hypothesis. The Hypothesis in this paper H1: was that PDS positively influence academic staff content knowledge practices. Results were provided beginning with Pearson's Correlation Co-efficient findings in Table 3:

Table 3: Pearson correlation co-efficient results between PDS and content knowledge pedagogical practices

		PDS	CKP
PDS	Pearson correlation	1	.261**
	Sig (2-tailed)		0.001
	N	156	154
CKP	Pearson correlation	.261**	1

	Sig (2-tailed)	0.001	
	N	154	180

Correlation is significant at 0.01 level (2-tailed)

Table 3 shows Pearson correlation coefficient index between PDS and content knowledge practices r = 0.261**, sig = 0.001 less than 0.05. This implied that there was a highly positive significant relationship between PDS and content pedagogical practices of academic staff in CHUSS and COVAB. The study hypothesis that PDS significantly relate with content knowledge practices was accepted. This implied that as PDS (content focus, active learning, coherence, collective participation) are organized and offered to academic staff basing on their areas of specialization, the higher the extent that they would acquire skills to appropriately select and teach appropriate content and the reverse is true. This finding was supported by the Adult Learning Theory which had it that through training adults following they are likely to do their work better as suggested by the theory. This finding resonated well with the Situated Learning theory which stipulates that learning is best achieved during educational training/sessions that are separate from the settings in which learning would be applied. To confirm these findings, a Simple Regression Analysis was run and findings are offered in Tables 4, 5 and 6:

Table 4: Model summary table on the influence of PDS on content pedagogical practices

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.261[a]	.068	.062	.57404

a. Predictors: (Constant), CKP

The model summary Table shows that adjusted r2 = 0.062 which means that PDS explain only 6.2% of the change in content pedagogical practices, thus the remaining 93.8% is accounted for by other factors not considered in the study.

Table 5: ANOVA Table on PDS and content pedagogical practices

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.670	1	3.670	11.139	.001[b]
	Residual	50.087	152	.330		
	Total	53.757	153			

a. Dependent Variable: PDS
b. Predictors: (Constant), CKP

The ANOVA Table shows F value 11.139 with a corresponding sig value .001 which is less than 0.05. This means that PDS have a positive significant influence on content knowledge pedagogical practices. Thus, as PDS are organized and administered in the university, the higher the possibility that content knowledge pedagogical practices would improve.

Table 6: Coefficient Table on the effect of PDS on content pedagogical practices

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.413	.412		10.714	.000
	CKP	.313	.094	.261	3.337	.001

a. Dependent Variable: PDS

Table 6 shows that the Beta value 0.261 was followed by a significance P value 0.000, less than 0.05. Hence the hypothesis which states that PDS have a positive influence on content knowledge practices was accepted while the null hypothesis which States that PDS have a negative influence on content knowledge practices was rejected. This suggested that there was a highly positive significant influence of PDS on content knowledge pedagogical practices of academic staff in the colleges where this study was done in Makerere University. Qualitative findings revealed that PDS greatly help and have helped respondents to improve on content knowledge of academic staff. On the qualitative question what is the influence of PDS on content knowledge of academic staff. One of the academic administrative staff in COVAB indicated that,

PDS have helped many of our young staff to acquire knowledge required on the course. These normally are encouraged to attend workshops, seminars, conferences and study leaves both from within and outside the

university. They have been identified to have a command of the subject matter every after training. Trainings of this nature have highly improved on academic staff content knowledge.
Findings from this participant show that PDS do influence the content knowledge of participants significantly.

Whereas one lecturer 009 revealed that
When I was offered a study leave, I did not have adequate knowledge of research. However, after this training with the sponsorship of the university, I am able to do research better and I can adequately research on any topic or area of study before presentation.
This finding also indicates that PDS help one to improve on content knowledge as the trainers handle all facets of higher education, more especially research which is the center of knowledge.

IV.   Discussion, Conclusions and Recommendations

The objective of the study was to establish the influence of PDS on academic staff content knowledge practices. Simple and Pearson Correlation Coefficient results revealed that PDS had a direct positive significant influence on academic staff content knowledge practices. This suggests that once PDS are offered with content which is focused on improving and deepening lecturers' content knowledge, then there is a high possibility that content knowledge selection and transfer in the classroom would be possible while failure to do the same implies the alternative. This finding is in agreement with Knowles Adult Learning Theory which suggests that through offering training basing on experiences related with their specialties, the higher the possibility that this content knowledge would be practically taught in class.

These findings revealed that PDS had a direct positive significant influence on content knowledge practices this was in agreement with Baiku, Demas, Woldekawariat, Gatahun and Mekonnen[35] who studied the effect of teaching without pedagogical training in St. Paul's hospital millennium college, Addis Ababa and revealed that most instructors practiced their personal teaching methods which was huge, with no lesson plan, no clear objectives, poor time management and overlapping content thus depicting content knowledge application gaps.

The study findings which shows a positive significant relationship between PDS and content knowledge practices of academic staff was in direct support of Liu and Liao[27] who studied professional development and teacher efficacy and revealed that professional development of teachers improved their knowledge and curriculum in the discipline significantly. Such finding concretizes that whenever PDS are offered and administered to academic staff, their content knowledge practices improve.

In agreement with the study finding, Kafyulilo[28] revealed that teachers' collaboration as an approach to professional development schemes enhances effectiveness of teachers masterly of content and following the curriculum as expected in science related disciplines. Teachers are the ones who implement the curriculum by selecting and combining the various aspects of knowledge contained in the curriculum or syllabus document. Hence through engaging them in PDS their content knowledge practices improve.

The study findings which showed a positive significant relationship between PDS and content knowledge practices of academic staff resonated well with Curwood[29] who established that the traditional forms of professional development did not allow space for teachers' narratives. Hence the traditional professional development was ineffective at engaging teachers as learners, promoting critical reflection or encouraging new understandings about content and pedagogy. Thus, with the use of modern approaches to PDS like content focus, active learning, participation and duration of training, the current study established that teachers content knowledge practices had improved with more masterly of the subject matter

In tandem with the study finding Penuel, Sun, Frank and Gallagher[38] showed that a well-designed professional development scheme can change teacher knowledge and practice. Professional development schemes enhance teacher knowledge and improves practice when sustained over it enhances teachers' knowledge of the curriculum implementation. Normally, active learning as one dimension of PDS enables teachers to master what they are supposed to offer to learners. The study finding that PDS had a direct positive significant influence on content knowledge practices this was in the same vein with Svendsen[40] (2016) who indicated that collaborative continuous professional development approaches are effective in bringing about positive changes in teachers practice attitudes knowledge. This study showed that weekly collaborated studies or professional developments were offered leading to acquisition of knowledge and skills in the course. In conclusion, PDS have a high positive significant influence on content knowledge pedagogical practices among academic staff in Makerere University.

Basing on the discussed results, it was concluded that PDS had a significant influence on content knowledge practices among academic staff in CHUSS and COVAB at Makerere University. It concludes further that considering staff specialization areas, organizing PDS periodically frequently, ensuring that PDS are coherently offered and academic actively participate in PDS the higher the chances that content knowledge pedagogical practices would be appropriately used among the academic staff and the reverse is true.

From the findings, discussion and conclusions, this study recommends that if content knowledge pedagogical practices are to be improved among lecturers in CHUSS and COVAB at Makerere University, policy makers like the University Council, University Senate, and College administrators should do the following; Should ensure that PDS are organized based on the one's line of specialization to allow align content offered with lecturers teaching course units. This would equip them with adequate knowledge in the discipline they teach which would benefit students learning outcomes.

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