

Innovation of Pharmacy Curriculum and Instruction: a case from Thailand

**Priprem A,
Sookaneknun P,
Toondee W,
Waleekhajornlert O*,
Ratanachodpanich T,**

**Faculty of Pharmacy and Health Science,
Mahasarakham University,
Thailand**



CMU

NU (1998)

6 yrs

SWU

SU

KKHU

MSU (2000) 6 yrs

UBU

MU

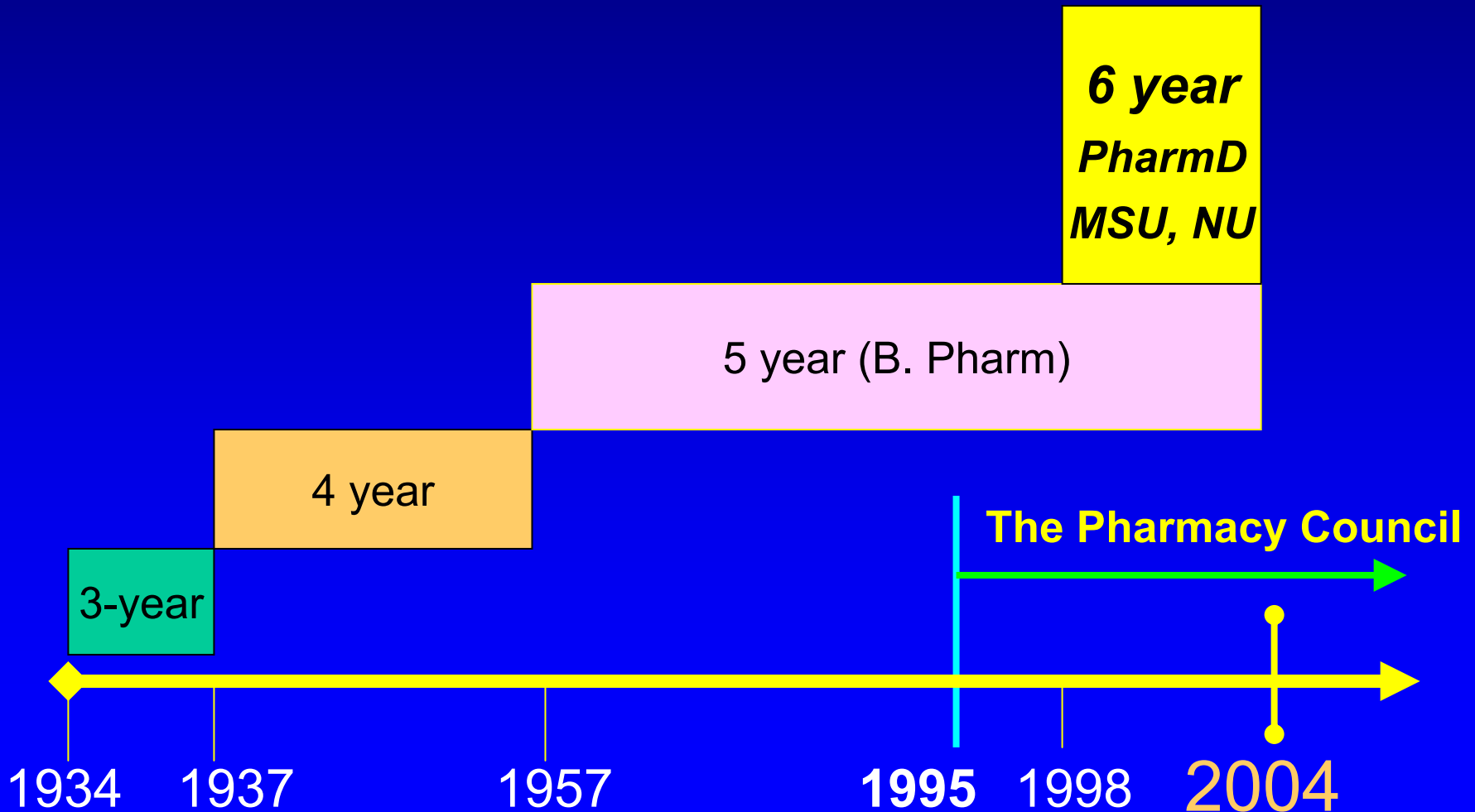
CU

HCU

RSU

PSU

Development of pharmacy curriculum (undergraduate)



Introduction

- **Pharmacy curriculum in Thailand has changed rapidly over the past decade**
- **There are two types of curriculum including**
 - 1. B. Pharm; 5 years**
 - 2. PharmD; 6 years**

postdoctoral / specialist

Ph.D. (3 y)

Board

Grad.Cert.

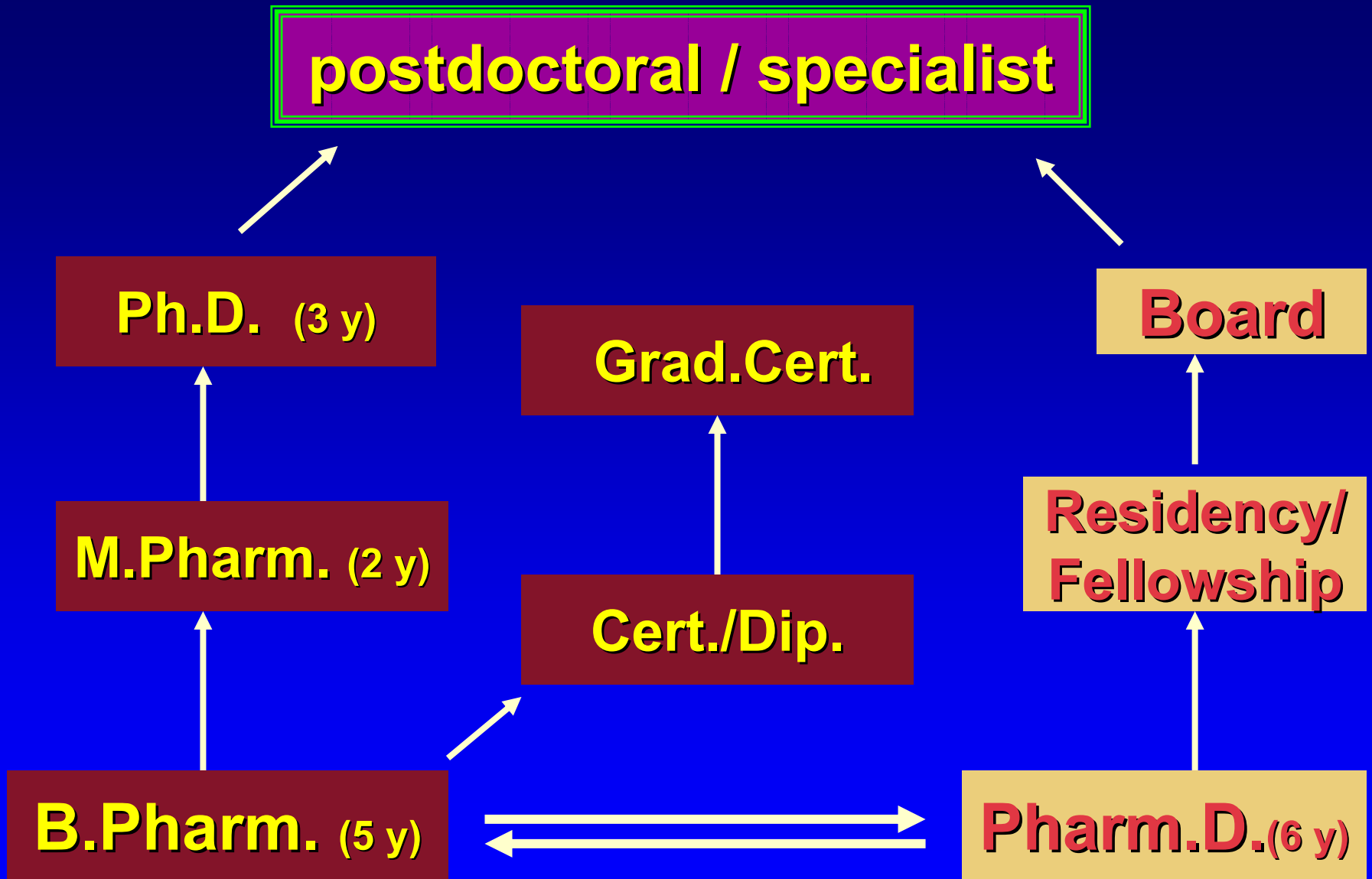
M.Pharm. (2 y)

**Residency/
Fellowship**

Cert./Dip.

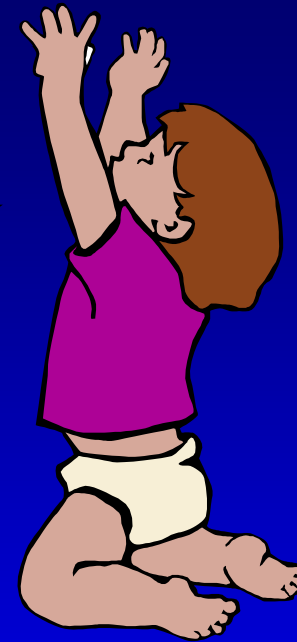
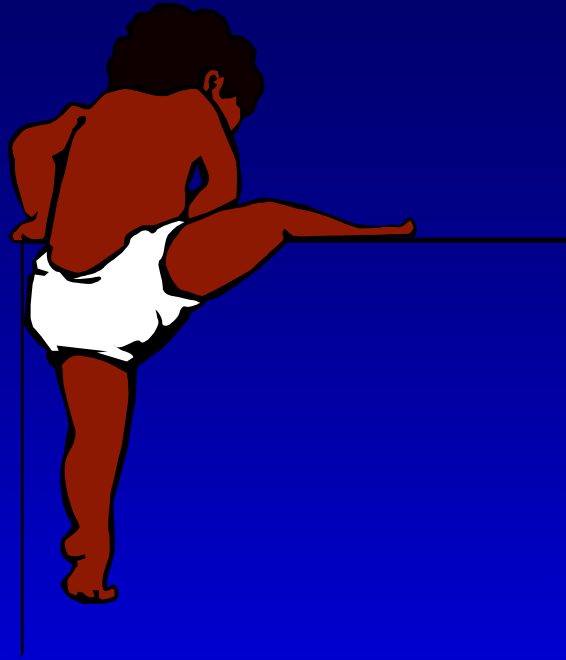
B.Pharm. (5 y)

Pharm.D.(6 y)



Differences between 5 year & 6 year

	B.Pharm	PharmD
	5 year	6 year
Total credit	~180	>210
Mission	Pharm science	Pharm care
System	Research oriented	Practice oriented
Post grad.	M. pharm	Residency
training	PhD	Board



**The new curriculum; Doctor of pharmacy (6-year)
need closely monitoring
subjected to rapid change**

Specific Objectives

- To assess the program and instruction of the Doctor of Pharmacy (Pharm D)
- To evaluate the level of students' satisfaction on learning approach using student-centered learning (SCL), problem-based learning, and project-based learning

Study Design & Data collection

- **Cross sectional design**
- **September, 2003.**
- **Study population was all students (N=189)**

Key Questions

- Demographic data
- Satisfaction on the facilities of the faculty
- Satisfaction on learning approach in the program
- Quality of instructors
- Program assessment

Assessment Domain

Content: concurrent, completeness, comprehensiveness, and applicability

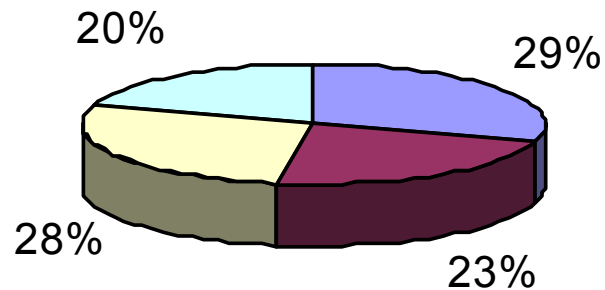
Learning process: an appropriateness techniques and effective use of media

Performance evaluation: fair, explicit criteria feedback

Results

Demographic

Response rate was 95.8%

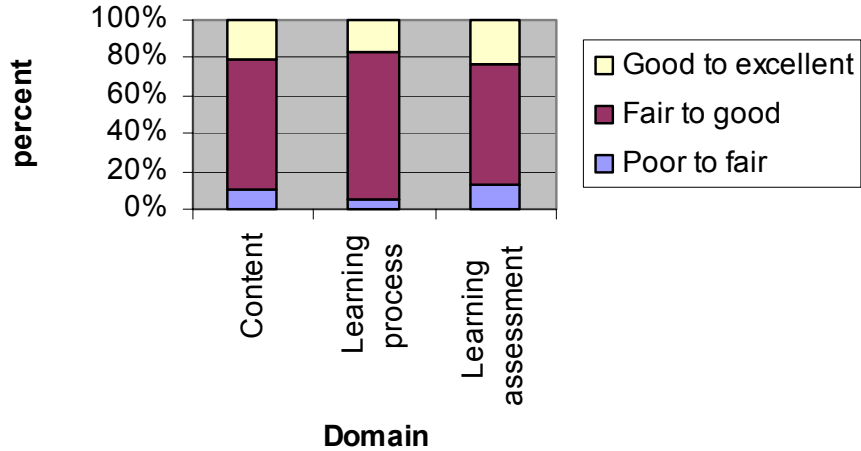


- The first year (%)
- The second year (%)
- The third year (%)
- The fourth year (%)

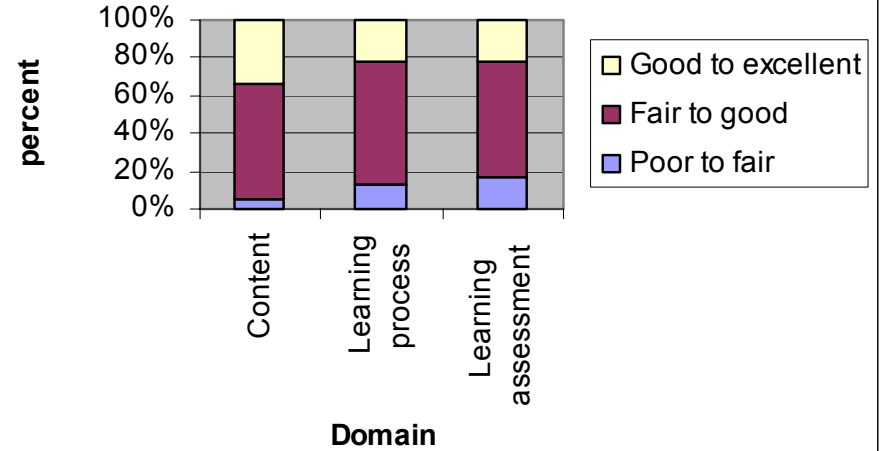
Program Assessment

- **Most of the students (>70%) satisfied on the program.**
- **There were some courses including Pharmaceutical Science I (2nd year) and Clinical Pharmacy Practice (4th year) that had a room for improvement.**

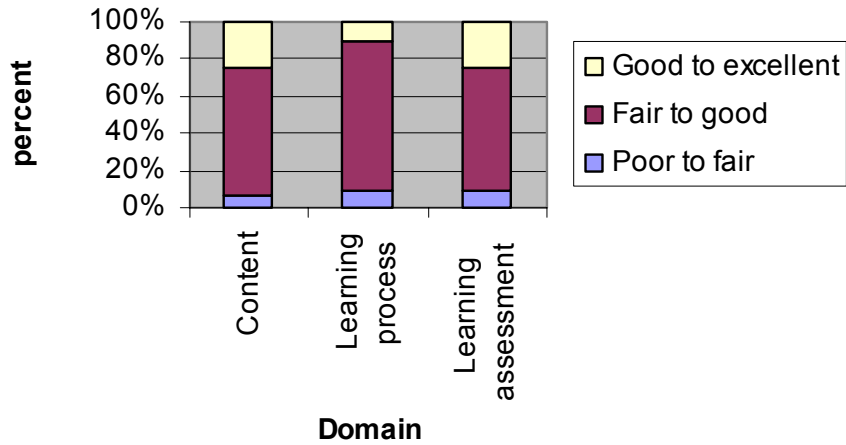
Language course



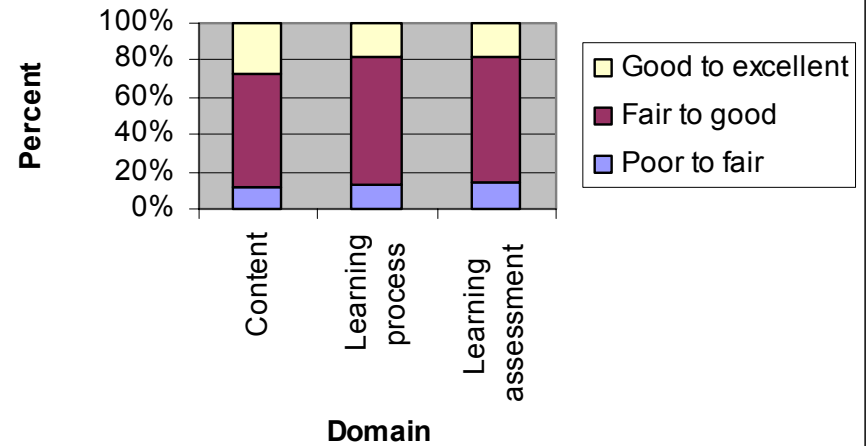
Computer and technology course



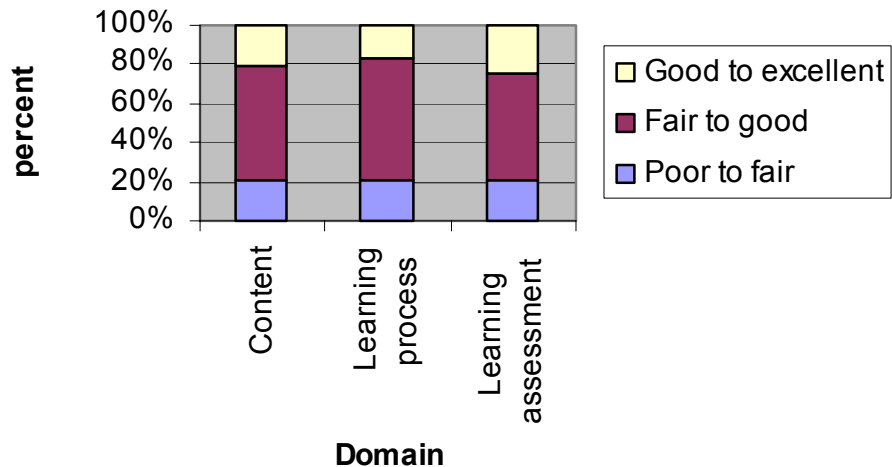
Basic Sciences course



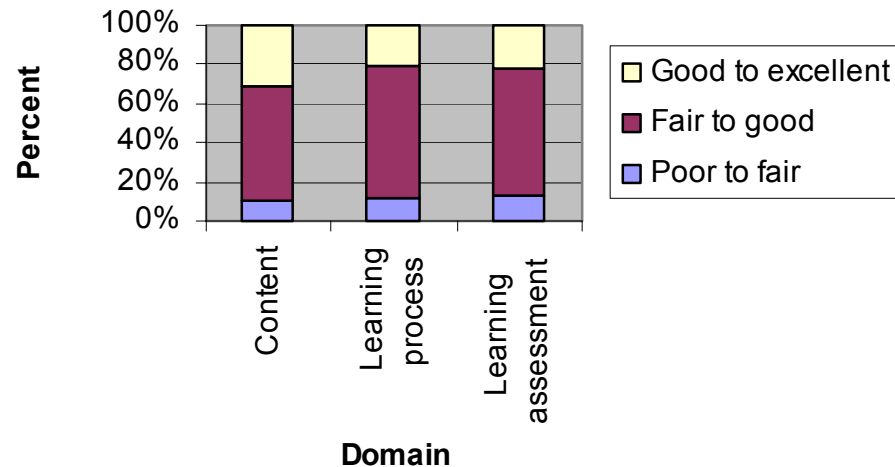
Human&Social course



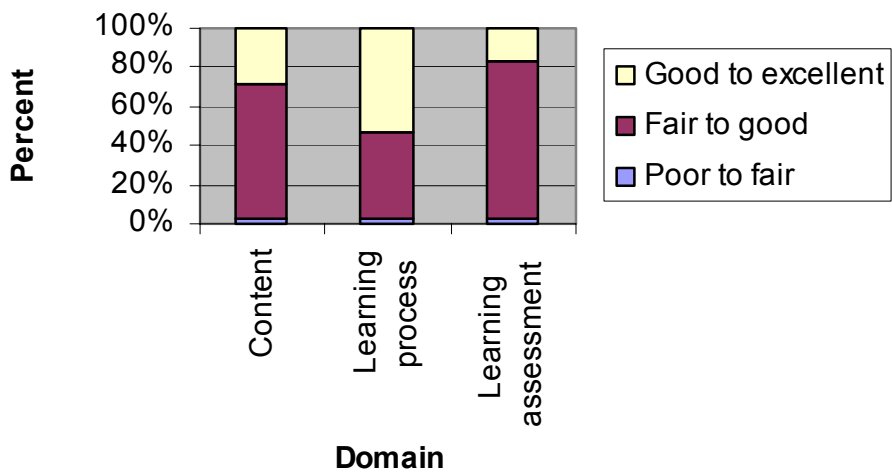
Pharmaceutical Sciences I



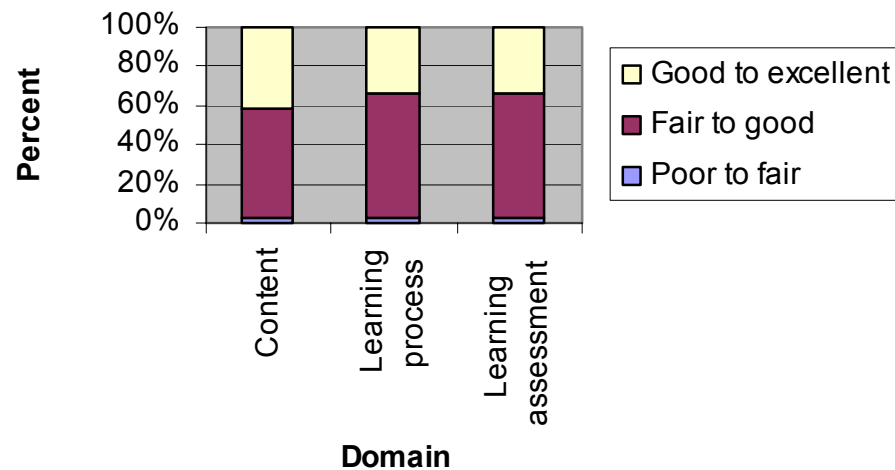
Pharmaceutical Sciences II



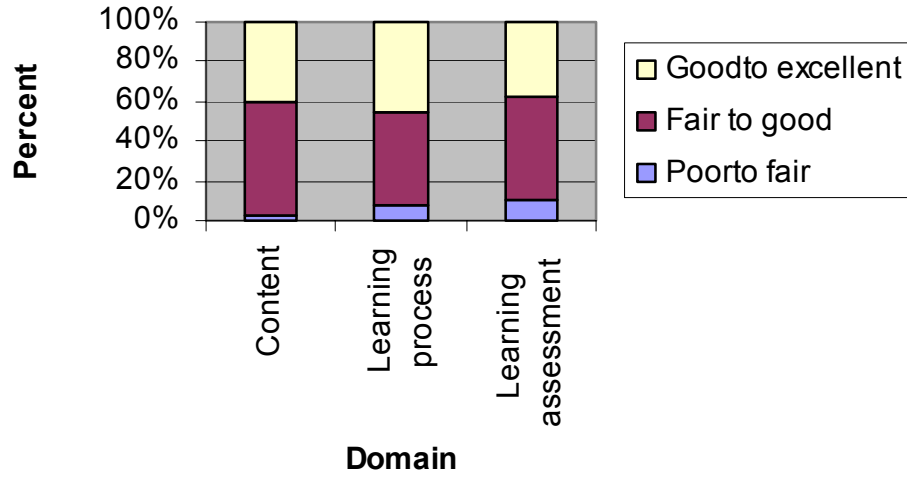
Pharmaceutical Sciences III



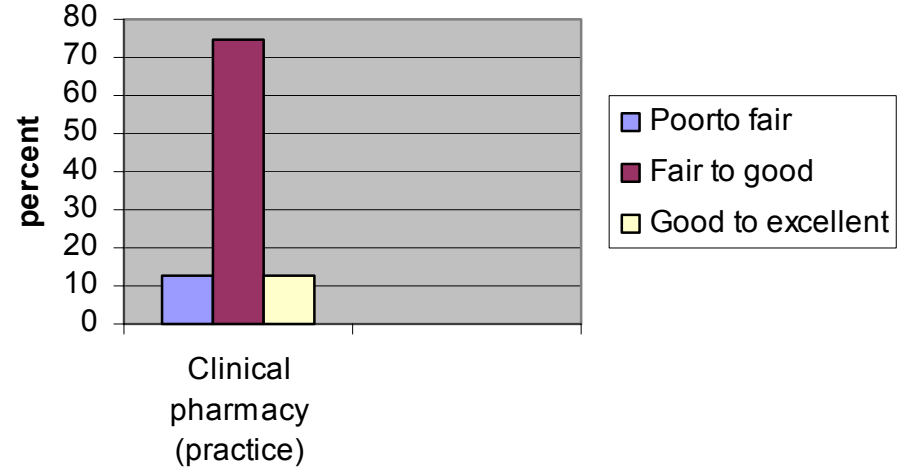
Pharmaceutical Sciences IV



Clinical Pharmacy



Clinical pharmacy: practice course



Instruction Assessment

- **Assessed items:** knowledge and experience of lecturers, preparing for lectures, continually update the contents, technique of teaching, teaching in principal, discussion, recommendation of references, learning assessment.
- **Instructors satisfied**
- **The mean score from the four point likert scale ranged from 2.85 to 3.22**

Satisfaction on Student-centered learning (SCL)

- **Most of students satisfied in the aspect of**
 - **Stimulate thinking and searching**
(score= 3.02+/-0.66)
 - **Serve in learning and working in team**
(score =3.17+/-0.71).

Satisfaction on Project Based Learning and Problem Based Learning

- The result were similar to the satisfaction on SCL.
- However, there were some points that should be improved as following;
 - Medias (score= 2.35 +/-0.77)
 - Equipment (score= 2.22 +/-0.71)

Conclusion

- **The program assessment: fair to good level**
- **Instruction assessment: Most students satisfied on the quality of instructor**
- **Learning approach:**
 - **Stimulate critical thinking ability, and searching ability**
 - **Support cooperation of the student and team work**

Conclusion

- **The results showed that there were the room for improvement in some aspects such as resource of information, chemical and instrument for the pharmacy laboratory**
- **Continuous evaluation is an essential tool for sustainable educational quality particularly with a professional PharmD program**



Acknowledgements

Staff at Faculty of Pharmacy and Health
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Mahasarakham University

Supplement Data

Definition of Terms Used

- **Student-centered learning** is a learning model that places learner in the center of learning process. This model develops problem solving, critical thinking, and reflective thinking.
- **Problem-based learning** is a dynamic methodology that incorporates the essential components of the scientific method with non-directive questioning.
- **Project-based learning** is an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks.

Core Courses Assessed

- **Language**
- **Computer and technology**
- **Basic sciences**
- **Human & social**
- **Basic pharmaceutical sciences**
- **Clinical pharmacy**
- **Research**

Curriculum Assessment

Course	Assessment	N	poor to fair (<2) %	fair to good (2-3) %	Good to excellent (>3) %
Language	Content	178	10.67	69.10	20.22
	Learning process	178	3.93	67.95	14.04
	Learning assessment	178	12.36	64.07	23.60
Computer and technology	Content	174	5.75	60.34	33.91
	Learning process	173	13.29	64.16	22.54
	Learning assessment	174	16.67	61.49	21.83
Basic Sciences	Content	174	6.90	68.97	24.14
	Learning process	174	8.04	74.57	9.25
	Learning assessment	174	9.20	66.67	24.14
Human & social	Content	172	11.05	61.63	27.33
	Learning process	172	13.37	68.60	18.02
	Learning assessment	172	14.53	66.86	18.60

Curriculum Assessment (cont.)

Course	Assessment	N	poor to fair (<2) %	fair to good (2-3) %	Good to excellent (>3) %
Pharmaceutical Sciences I	Content	128	21.09	57.81	21.09
	Learning process	128	21.09	62.50	16.41
	Learning assessment	128	20.31	55.47	24.22
Pharmaceutical Sciences II	Content	124	10.48	58.06	31.45
	Learning process	124	11.29	67.74	20.97
	Learning assessment	124	12.90	65.32	21.77
Pharmaceutical Sciences III	Content	87	2.29	58.62	24.13
	Learning process	87	3.45	65.52	77.01
	Learning assessment	87	2.29	74.71	16.09
Pharmaceutical Sciences IV	Content	39	2.56	56.41	41.03
	Learning process	39	2.29	64.10	33.33
	Learning assessment	39	2.56	64.10	33.33

Curriculum Assessment (cont.)

Course	Assessment	N	poor to fair (<2) %	fair to good (2-3) %	Good to excellent (>3) %
Clinical pharmacy (content)	Content	37	2.70	56.76	40.54
	Learning process	37	8.10	45.95	45.95
	Learning assessment	37	10.81	51.35	37.84
Clinical pharmacy (practice)	Overall	32	12.5	75.0	12.5

Instruction Assessment

Items	Mean (SD)
1. <i>Instructors are well prepare for lecture</i>	3.06(0.65)
2. Instructors recommend references,& resources (textbook, journal, internet)	3.01(0.71)
3. Instructors give the principal that could be applied	2.85(0.69)
4. <i>Instructors allow for discussions and questions in the class</i>	3.16(0.70)
5. <i>Instructors are qualified in knowledge and experience</i>	3.20(0.75)
6. Instructors use teaching technique to make the students understand	2.84(0.71)

Instruction Assessment

Items	<i>Mean (SD)</i>
<i>7. Instructors have professional knowledge and skill</i>	3.11(0.78)
<i>8. Instructors use an up-to-date data in teaching</i>	3.11(0.68)
9. Instructors feed back for learning assessment	2.87(0.78)
10. Instructors are on time	2.94(0.77)

Satisfaction on SCL (4 scale: 1-4)

Items	<i>Mean (SD)</i>
1. Students have opportunity to set aims and learning schedule	2.47 (0.76)
2. Using variety of learning methods	2.69 (0.70)
<i>3. Stimulate critical thinking ability, and searching ability</i>	<i>3.02 (0.66)</i>
4. Students can develop their homeworks depending on individual attention	2.46 (0.75)

Satisfaction on SCL (4 scale: 1-4)

Items	Mean (SD)
5. Students can apply their knowledge in the real situations	2.88 (0.73)
6. Student have more chance to practice to gain more experience	2.86 (0.70)
<i>7. Learning methods support cooperation of the student and team work</i>	<i>3.17 (0.71)</i>
8. Learning by using variety of medias	2.84 (0.71)
9. The learning assessment is conducted continuously	2.80 (0.78)
10. Students have chance to participate in the learning assessment	2.77 (0.75)

Structure of B.Pharm. curricula

5-year

PSU

GE	52 cr
Prof& Health Sc	122 cr
Clerkships	6 cr
Elective	3 cr

Total 183 cr

KKU

GE	48 cr
Professional Core	114 cr
Pharmacy Electives	18 cr
Electives	6 cr

Total 186 cr

Structure of Pharm D curricula

MSU

GE	30 cr
Basic Sc	30 cr
Basic Ph Sc	87 cr
<i>Clinical Pharm</i>	<i>65 cr</i>
Research	18 cr
Electives	10 cr
Total	240 cr

NU

GE	30 cr
Basic Pharm	60 cr
Prof. courses	116 cr
Pharm elective	10 cr
Electives	6 cr
Total	222 cr