

E-Content
Department of Education, Patna University.
M.Ed. Semester II
Paper-C.C.6

By: -

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Unit V: Problems and Issues in Teacher Education.

Topic: Sufficiency of subject matter knowledge for teaching at senior secondary level.

Objectives:-

After reading this content, you will be able to:-

- Know about subject matter knowledge.
- Discuss about sufficiency of subject matter knowledge for teaching at senior secondary level.

Introduction:-

Subject matter is an essential component of teacher knowledge for teaching at senior secondary level. Subject matter knowledge is widely acknowledged as a central component of teaching.

Subject matter knowledge:-

Subject matter knowledge for teaching at senior secondary level includes understanding of the basic concepts and principles of the concept of function in variety of ways as well as the relationships among them. Prospective teachers of senior secondary level must understand and be able to explain why a particular proposition such as univalence and arbitrariness is worth knowing and how it is related to other concepts both within the discipline and without, both in theory and practice. The prospective teachers should be able to understand the concept of function in different representations such as illustrations, examples and explanations and be able to interpret and form connections among and between them in the different divisions of mathematics, other disciplines or everyday life. With use of different representations, the prospective teachers acquire representational repertoire that shows a good understanding of the concept of function in the different discipline(subjects) of senior secondary level. They must have a deeper understanding of general and more complicated knowledge and be

able to represent essential principles and properties and have easy access to specific examples.

In the words of “ Shulman, (1986)”

“To teach is first to understand.”

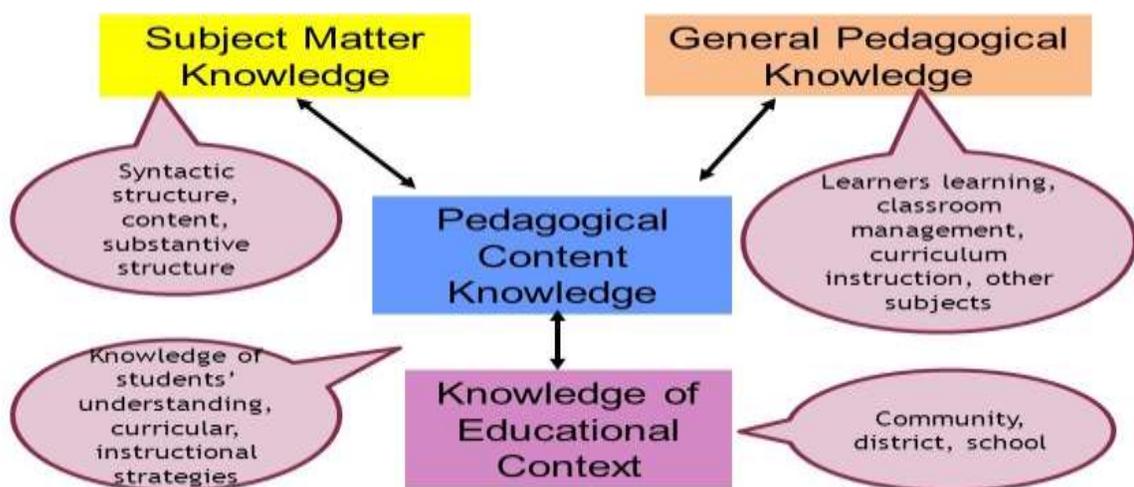
In the words of “ Howsam et al. (1976)”

“If the promise of the teaching profession is to achieve, we must attend to the processes by which its knowledge base is developed and transmitted.”

Components

Basic components of subject matter knowledge for teaching at senior secondary level:-

- Content knowledge
- General pedagogical knowledge
- Pedagogical contents knowledge (PCK)
- Curriculum knowledge
- Knowledge of learners and their characteristics
- Knowledge of educational context
- Knowledge of educational aims, purpose, and value and their philosophical and historical grounds.



Content knowledge

In content knowledge, Knowledge of substantive and syntactic structures has implication for what teachers choose to teach, and how they teach.

Substantive Structure knowledge

-Knowledge of the major facts, concepts, principles within a field and the relationships among them.

Syntactic structures knowledge

-Knowledge regarding methods, rules of evidence and proofs in that domain and into how knowledge is being evaluated by the discipline's experts.

The amount of the degree of substantive & syntactic structures that a teacher possesses concerning his/her respective field would certainly influence the delivery of the subject content to the students.

General pedagogical knowledge

In general pedagogical knowledge Principle and strategy of classroom management as well as its organisation are arises in the delivery of the subject matter.

- Example: understand how students learn, theories of learning, child psychology, teaching strategies, classroom management, assessment, etc....

Knowledge of Curriculum, aims and objectives

Curriculum knowledge:

-Particular grasp of the materials and programmes that serve as 'tool of the trade' of teachers.

Aims and Objectives:

- Need to understand the aims and objectives of the senior secondary level curriculum – the planned teaching activities are in tandem.

Knowledge of learners and their characteristics

A senior secondary teacher must have knowledge of learners and their characteristics. Some important terms related to this are as follows:-

- The needs of learning basic concepts of subject matter of senior secondary level
- Learners difficulties
- Learners misunderstanding
- Learners misconception

These knowledge involve conceptual and procedural knowledge, conceptual errors and level of understanding.

- Need to know techniques in evaluating learners' understanding and diagnosing misconception/appropriate learning strategies.
- Need to know students' learning style (imaginative, analytical, practical and dynamic learner).

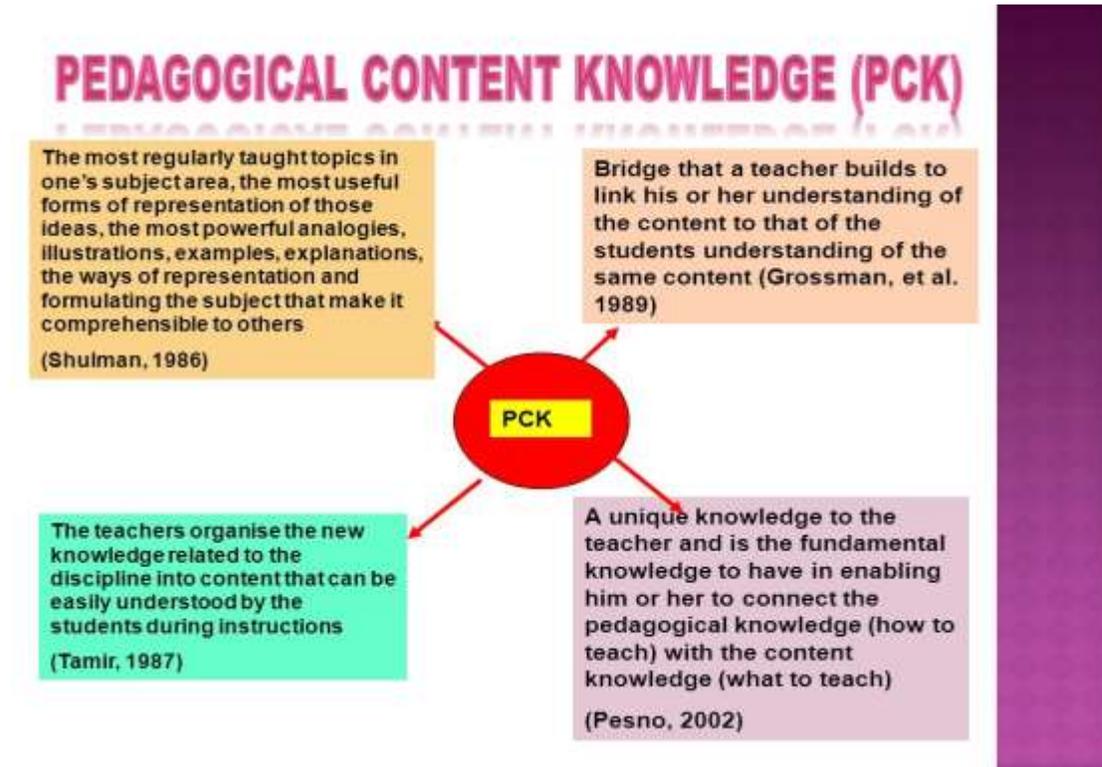
Knowledge of Educational Context

- Knowledge of school, classrooms and all setting where learning takes place (districts, school, communities and cultures).
- Contextual knowledge includes knowledge of the area where the teacher teaches like the area's aspiration, expectations and limitations.

Knowledge of Educational aims, purposes, and values, and their philosophical and historical grounds.

- Purposes of teaching and learning
- Values
- Philosophy of teaching mathematics
- Historical ground

Pedagogical contents knowledge (PCK)



Conclusion

A senior secondary school teacher needs an excellent subject knowledge and an excellent ability to communicate this knowledge in a meaningful way to learners. Teacher development programmes tend to focus on enhancing pedagogy and classroom teaching skills, and developing trendy 21st century skills such as creativity and collaboration. Too often, teacher trainers forget that expert knowledge of a subject is as important as expert knowledge of how to teach. Teaching is, after all a process of interaction between teacher, student and subject matter. Effective teaching requires teachers to possess detailed subject matter knowledge intertwined with knowledge of pedagogy, curriculum, student behaviour, learning objectives and outcomes.

Check your progress:

- Analyze subject matter knowledge for teaching at senior secondary level.