



THE OHIO STATE UNIVERSITY

Teaching Pedagogical Content
Knowledge and Content Knowledge in
Teacher Education Workshop

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THE OHIO STATE UNIVERSITY

THE LEARNING TO TEACH PHYSICAL EDUCATION RESEARCH PROGRAM AT OHIO STATE

Our research, our practice:
Helping teachers to teach better,
and teacher educators to train future teachers





At the end of today's session our goal is to equip you with knowledge and a set of tools to fundamentally change your ways of thinking about and teaching content, and in turn pedagogical content knowledge.



Today's agenda

- Introduction to concepts, principles and terms.
- Developing a knowledge packet.
- Using a knowledge packet in teaching and teacher education.



An introductory task...

Describe the technique of the sit up.

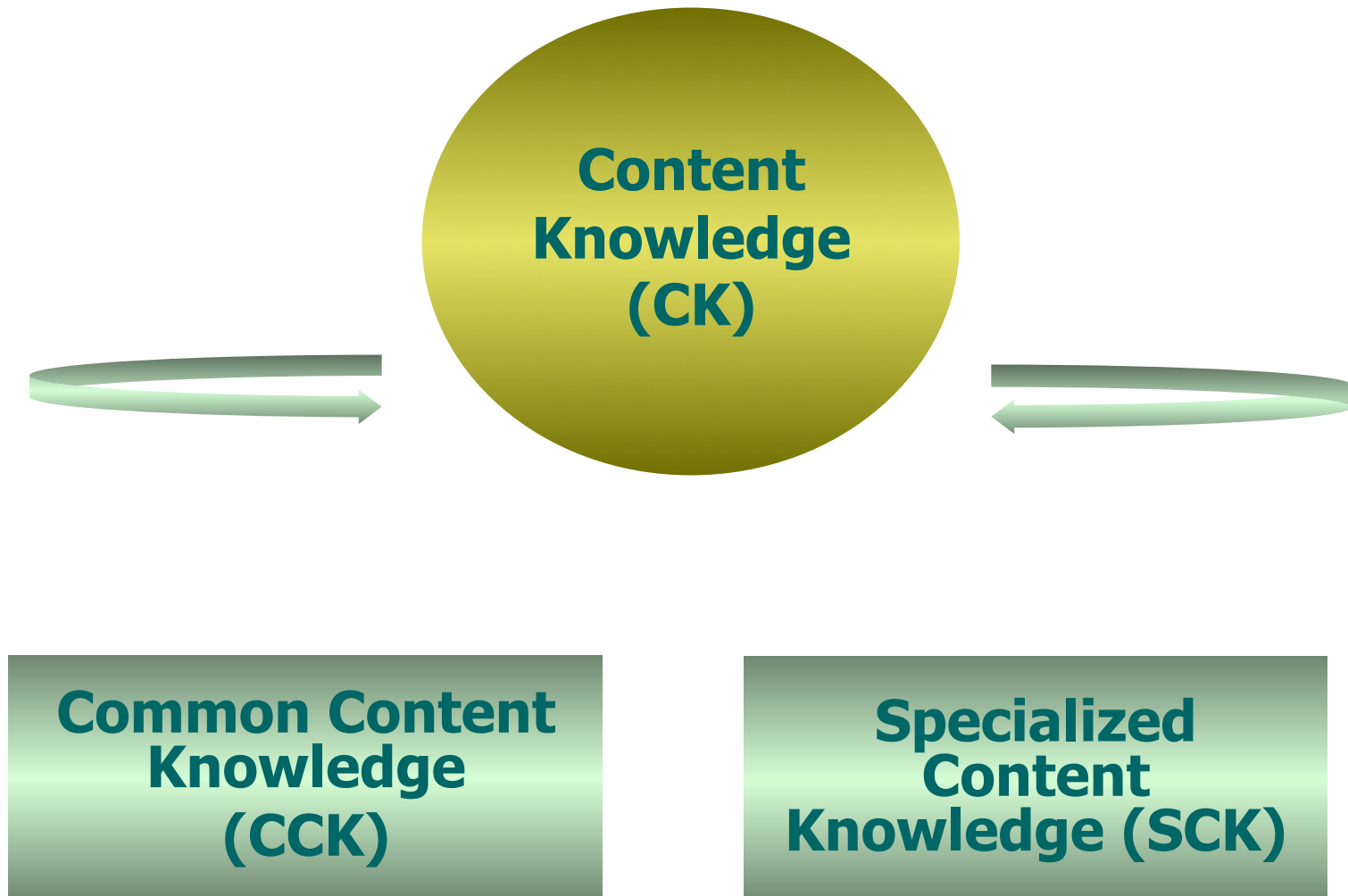
List a sequence to learn the sit up starting with a simple abdominal exercise like chin to chest and finishing with a rather challenging one like an inclined sit up with your head below your feet!

Which task progressions would you exclude if you were teaching 8th graders who were quite fit?

Which task progressions would you exclude if you were teaching 1st graders who may not have performed a sit up before?



What kinds of knowledge did you just use?





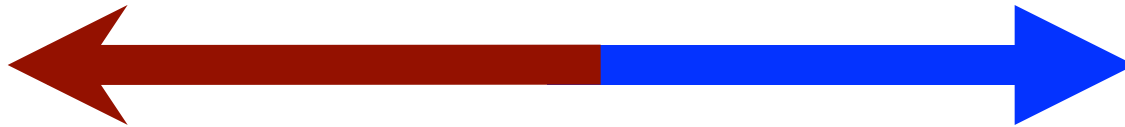
CCK

SCK

Rules & Etiquette



Technique & Tactics



Error Detection



Tasks & Representations





Pedagogical Content Knowledge

Is **context** specific

- Teaching beginners gymnastics in a well equipped gymnasium versus teaching them in a less equipped gymnasium

Is **content** specific

- Teaching tennis versus teaching soccer

Is **developmentally** specific

- Teaching middle school youth to pitch versus teaching children in grade one to throw

Is **child** specific

- What works for one child may not work for another



Checking for understanding..

The technique of the sit up!

Think about the sequence of task progressions for the teaching the sit up!

Which task progressions would you exclude if you were teaching 8th graders?

Which task progressions would you exclude if you were teaching 1st graders who little experience

**Common
Content
Knowledge
(CCK)**

**Specialized
Content
Knowledge
(SCK)**

**Pedagogical
Content
Knowledge
(PCK)**



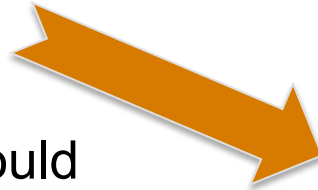
Checking for understanding..

The technique of the sit up!



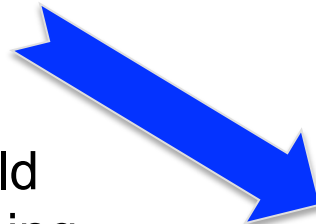
**Common
Content
Knowledge
(CCK)**

Think about the sequence of task progressions for the teaching the sit up!



**Specialized
Content
Knowledge
(SCK)**

Which task progressions would you exclude if you were teaching 8th graders?

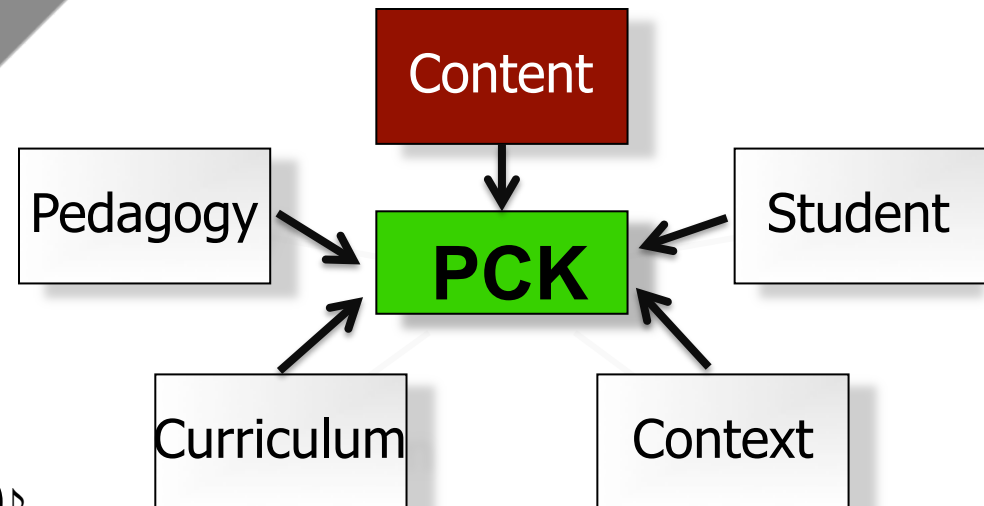
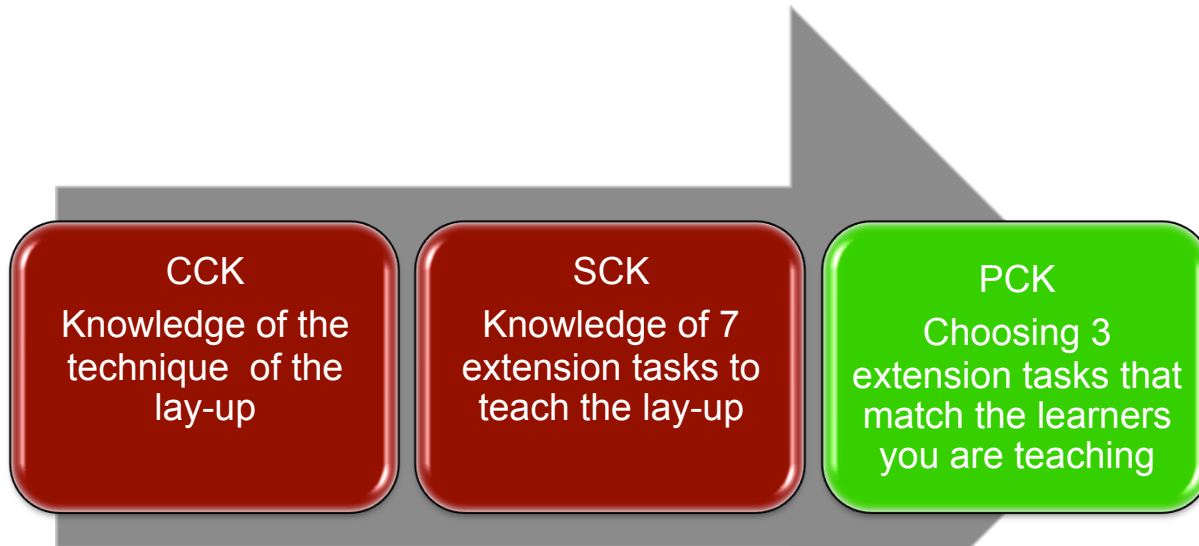


Which task progressions would you exclude if you were teaching 1st graders with little experience?



**Pedagogical
Content
Knowledge
(PCK)**

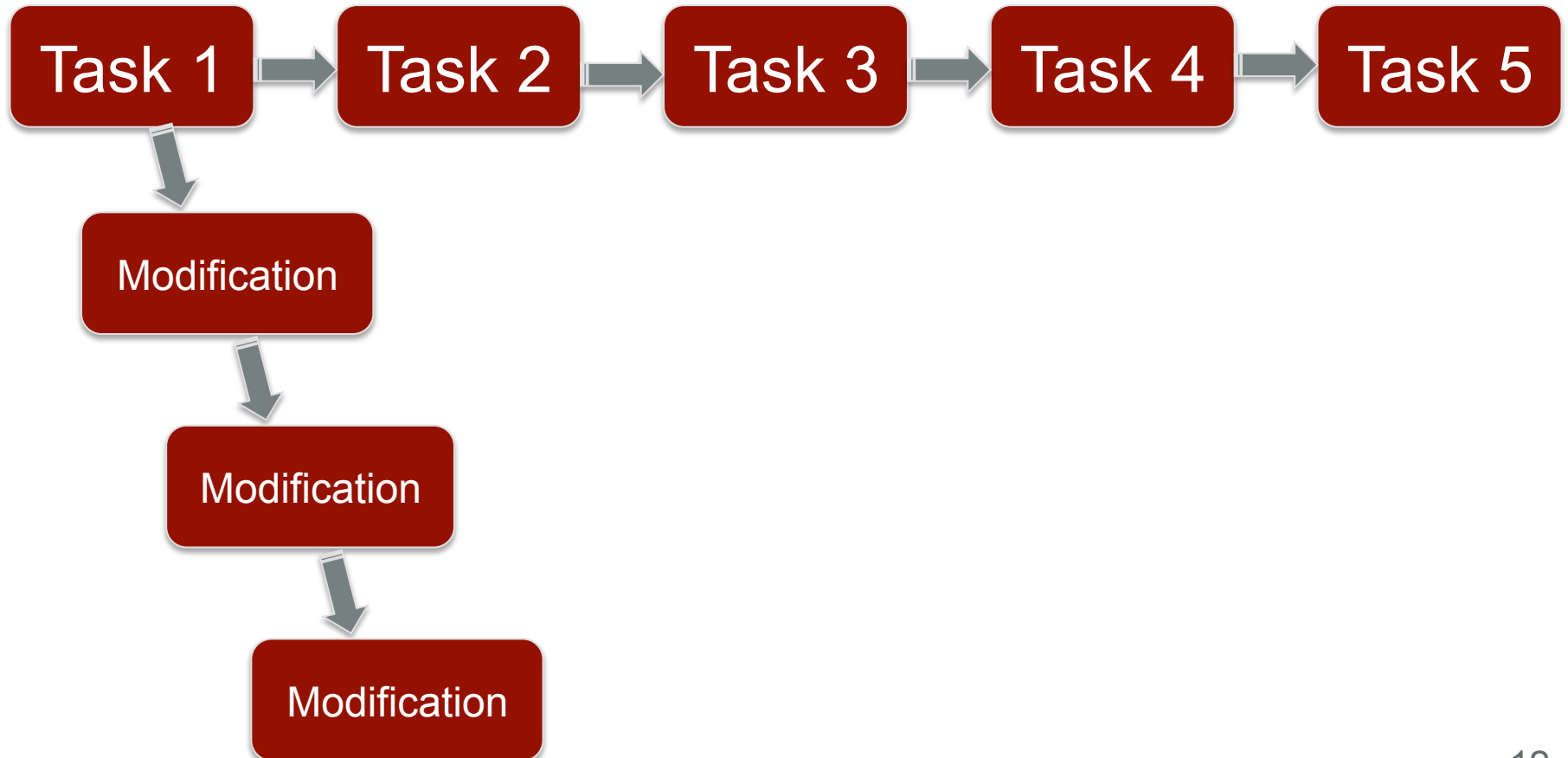
Pedagogical Content Knowledge (PCK) Informed by:



Grossman (1990)



Viewing the PCK as a series of inter and intra lesson tasks





Pedagogical Content Knowledge

- **Representations of content** (e.g., demonstrations, instructions, concepts) that teachers provide to students
- **Instructional tasks** (e.g., What the teacher asks students to do).



Dribbling Sequence

Other Dribbles:

Reverse

Speed

Hesitation

When ????

What is that decision????

3 v 3 Pass & Dribble

3 v 2 Pass & Dribble

2 v 1 with PAC

1 v 1 Dribble with Shot

1 v 1 in General Space with PAC

1 v 1 in Self-Space with PAC

1 v 1 Tap Out

Dribbling in General Space

Individual Dribbling: Dominant, Non-dominant, cross over

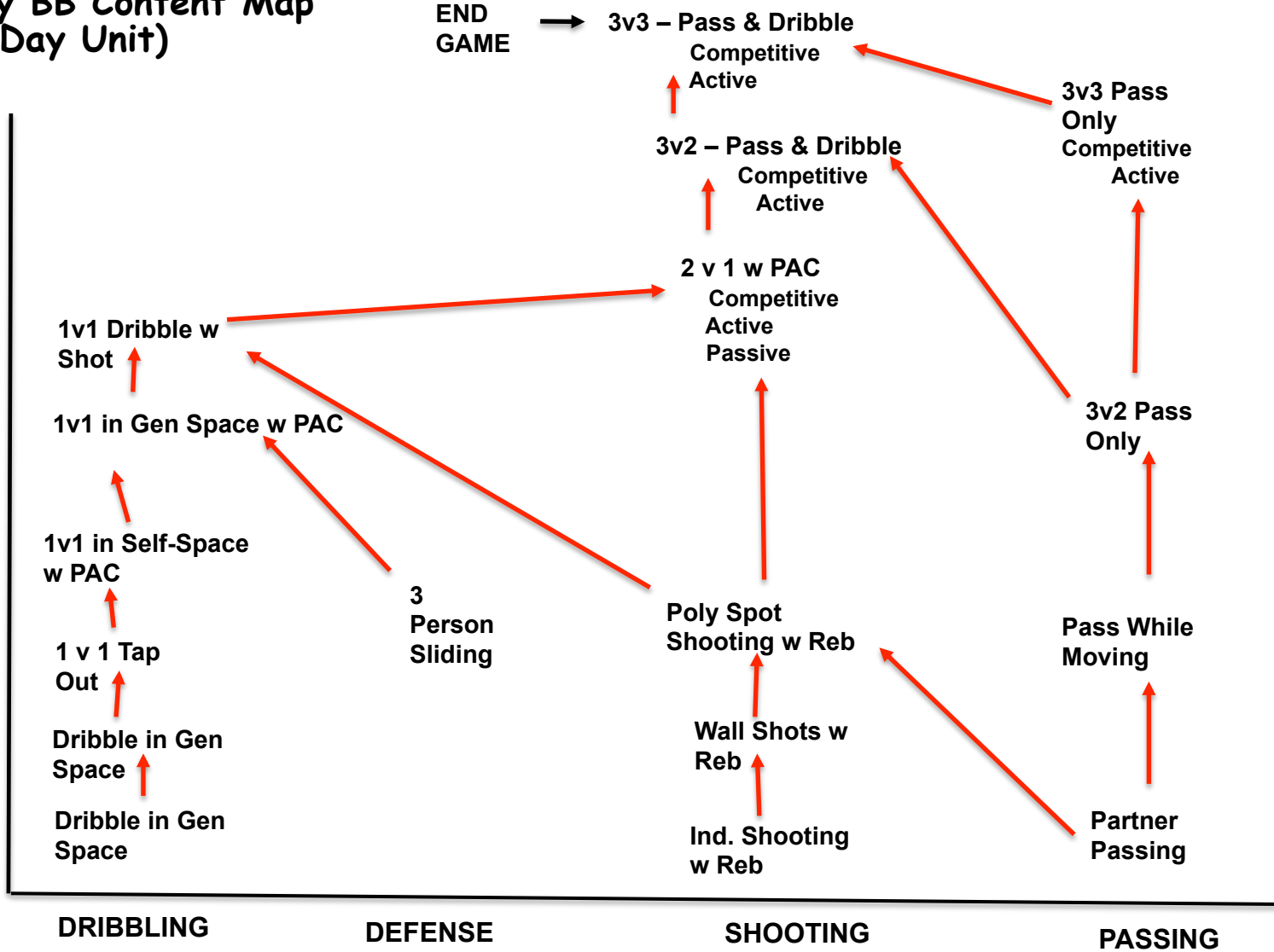


Tool # 1 The Content Map

A content map is a diagram that describes the SCK to be taught and its **relationship** to other SCK. It's a blueprint of what might be called a scope and sequence but is different in the way it shows relationships.



Elementary BB Content Map (5 Day Unit)





Creating a Content map

Add: Hot defender
Add: Hot defender
Add: warm defender
Add: passive defender
Add: Left right and U turn
Add: Red light green light in
Dribble through 8 pairs of cones inside a 15x15 yd grid
Intro dribbling with the inside and outside of the foot.

Add: Hot defender
Add: warm defender
3v1 passive defender
Add: Hot defender
Add: warm defender
4v1 passive defender
4v0
1v1 passing and trapping

1v1 passing and trapping

Please open you folder and pull out one of the sheets labeled content map.
Along the bottom of the map write the skill/techniques/tactics for the content.

Dribbling

Passing

Trapping with foot

Shooting

Cutting



Content Map Worksheet EXAMPLE.

Instructions: 1. Along the bottom row please indicate the skills that you would teach in a ___day unit of ___ (activity) to students in ___ (ES/MS/HS school). 2. Describe beginning with the earliest exercise the tasks that you would ask them to perform in order to learn the skill. 3. Please use additional forms to if needed

Using this template select two skills tactics and write the instructional progressions (tasks) for each from simple to more complex.



Relational Knowledge in the Content Map

Relational knowledge involves a teacher's use of a set of fundamental principles to organize the content.

In your groups could you talk about when you would begin to combine or integrate the skills and tactics for the skills of your subject area.

VOLLEYBALL CONTENT MAP

6 v 6 Games ← **4v4 – Full Games**

Triangle hit w/ Block
Single (add Partner)

Partner Net Dig (throw at varied hts)
Off-Center Pass (inc speed of throw)
Secondary

Zone (add receiver)
Serves

Ap/T/H
Shadow
Spikes

Double Blocks (add hit)
Side Slide
Blocks

5 Gr

Triangle SR/P/S/Tip

Triangle SR/P/S/Tip w Block (setter changes position)

Cone Sr w
P/S/Tip

Sliding Block
5th Grade Appropriate

Toss/Tip w
Block

4v4 No Bounce
4v4 w Serve
w/bounce

Toss & Tip

Stationary

4th Gr

3v3 Cone Serve w/ bounce

Line (Partner) w P/S/C (add jump catch)

3v3 T over P/S (bounce allowed)

Triangle over net T (tosses moves
T/P/S/C to other side of ct.)

Cone (UH/OH) (move back cones)

Triangle T/P/S/C (passer move 1 step)

Wall (UH/OH)

3rd Gr

2v2 Captain's Toss (T/P/S)

2V2 P/S

Partner T/S/P/C (add 1 step of move)

2v2 Pass Only

Pop Corn (2v2 Pass only)

Partner Toss/P/C (long/short T)
with move (inc dist)

Partner T/S/C (long/short T)
with move (inc dist)

Partner toss/pass/catch
(inc # of passes)

Partner T/S/C
(inc # of sets)

Self-Toss/P (inc # of touches)
Shadow

Self-Toss/S (inc # of touches)
Shadow

PASS

SET

SERVE

TIP/HIT

BLOCK



Working technique example of the Forehand overhead clear

Struggling phase: Misses the shuttle frequently, taps the shuttle without follow through, no backswing motion, no turn of the body in preparation, not ready to move, lack of wrist action, no weight transference in execution, and simply aiming to get shuttle back over the net without concerning for specific spot on the court

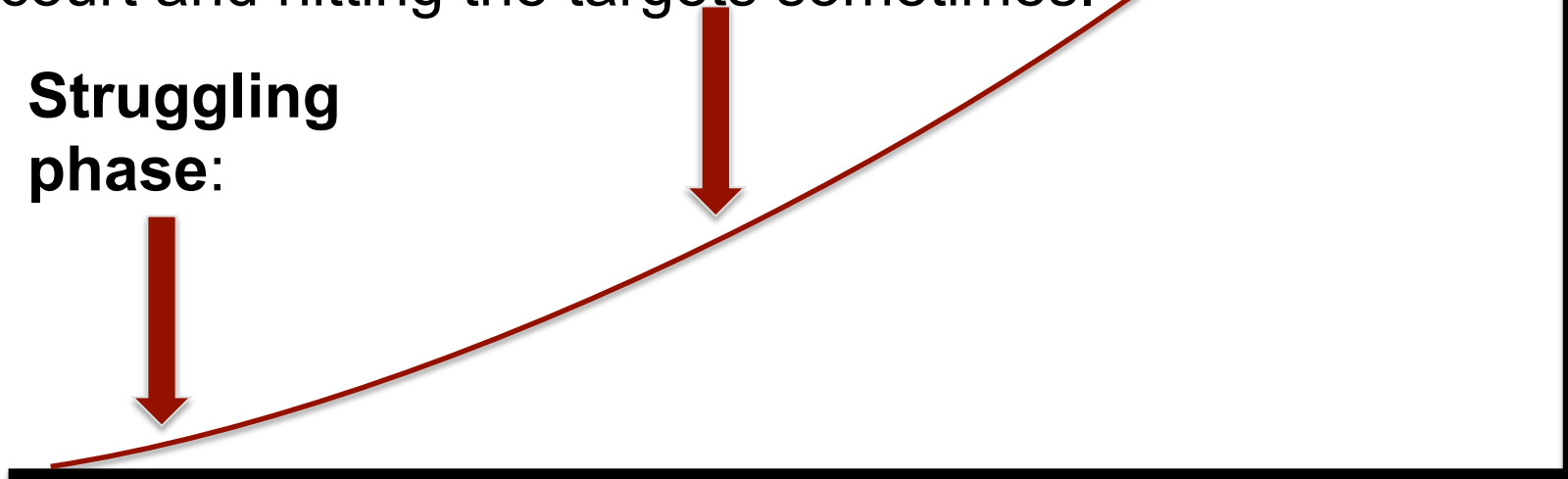




Working technique example of the Forehand overhead clear

Emerging phase: frequently hitting the shuttle, shots more consistent, able to place the shuttle to spaces only when it is hit directly to them, demonstrating some critical elements, aiming the shuttle at the back of the court and hitting the targets sometimes.

Struggling phase:



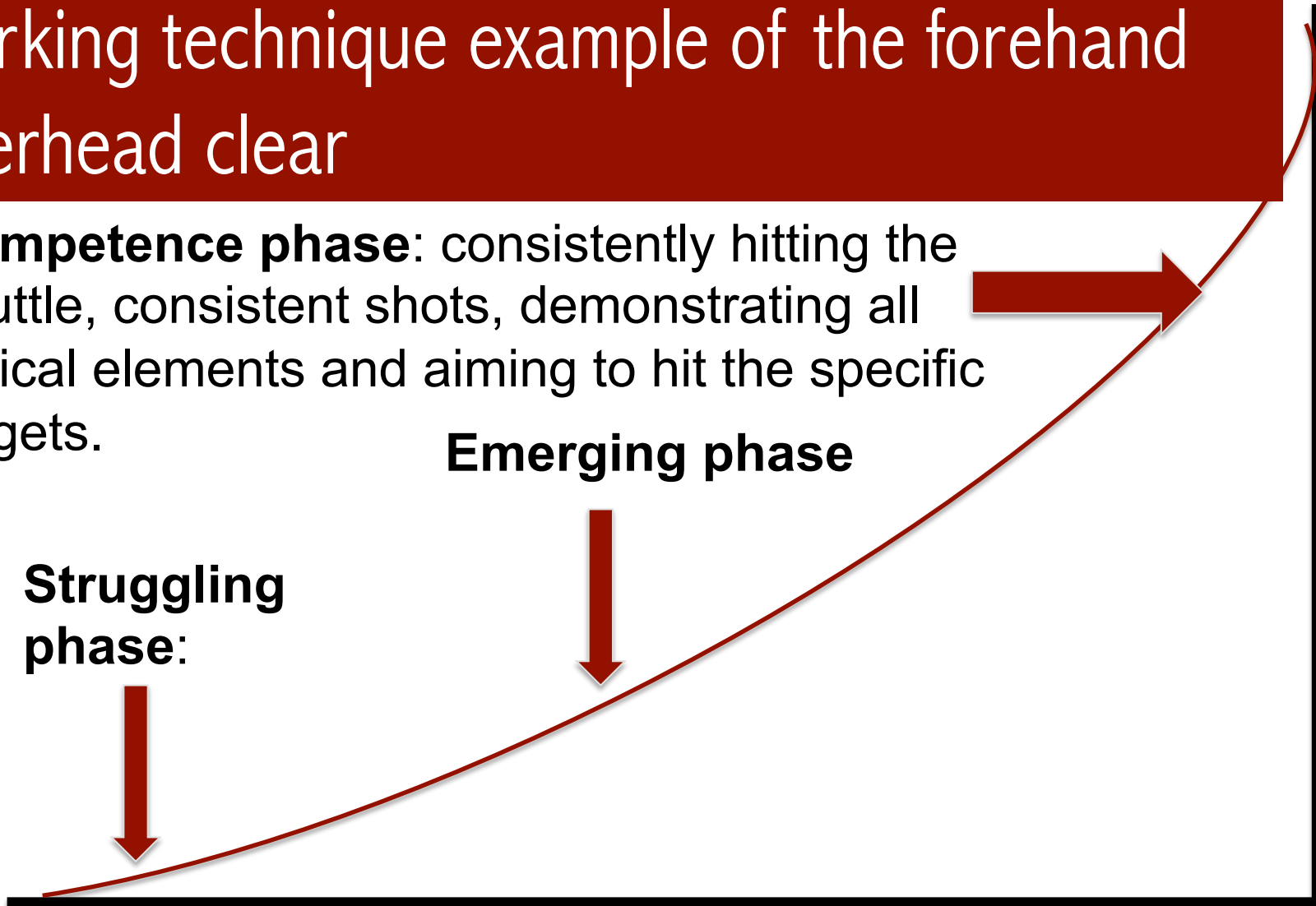


Working technique example of the forehand overhead clear

Competence phase: consistently hitting the shuttle, consistent shots, demonstrating all critical elements and aiming to hit the specific targets.

Emerging phase

Struggling phase:





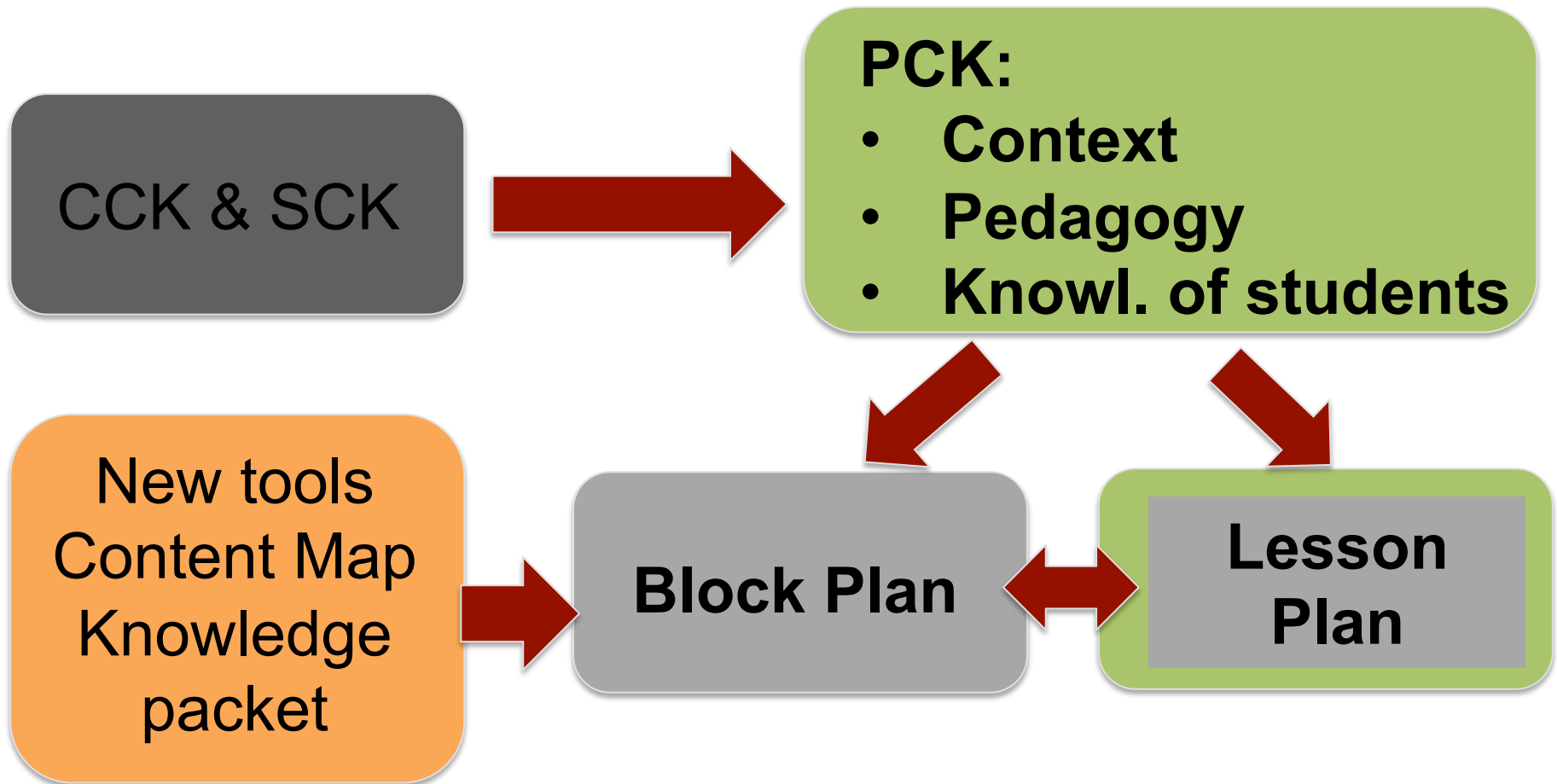
Our goal to develop deep understanding

Some Elements of Deep Understanding

- Specialized Content Knowledge (SCK)
- Relational nature of the SCK
- Working technique



Big Picture: Getting from CCK and SCK to PCK





Knowledge Packets (KP)

A booklet composed of:

- 1) The defined PK, CCK & SCK of a curriculum.**
- 2) The curriculum organized in some systematic way (Ours: K-2, 3-5, secondary).**
- 3) The content of the KP is defined by the SCK of a content map.**



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KP Components

Purpose – of task and its relationship to the game

Task Description – how the task is executed

Visual Representation – student arrangement

Motivational Aspect – something to help direct student attention

Equipment Needs - list

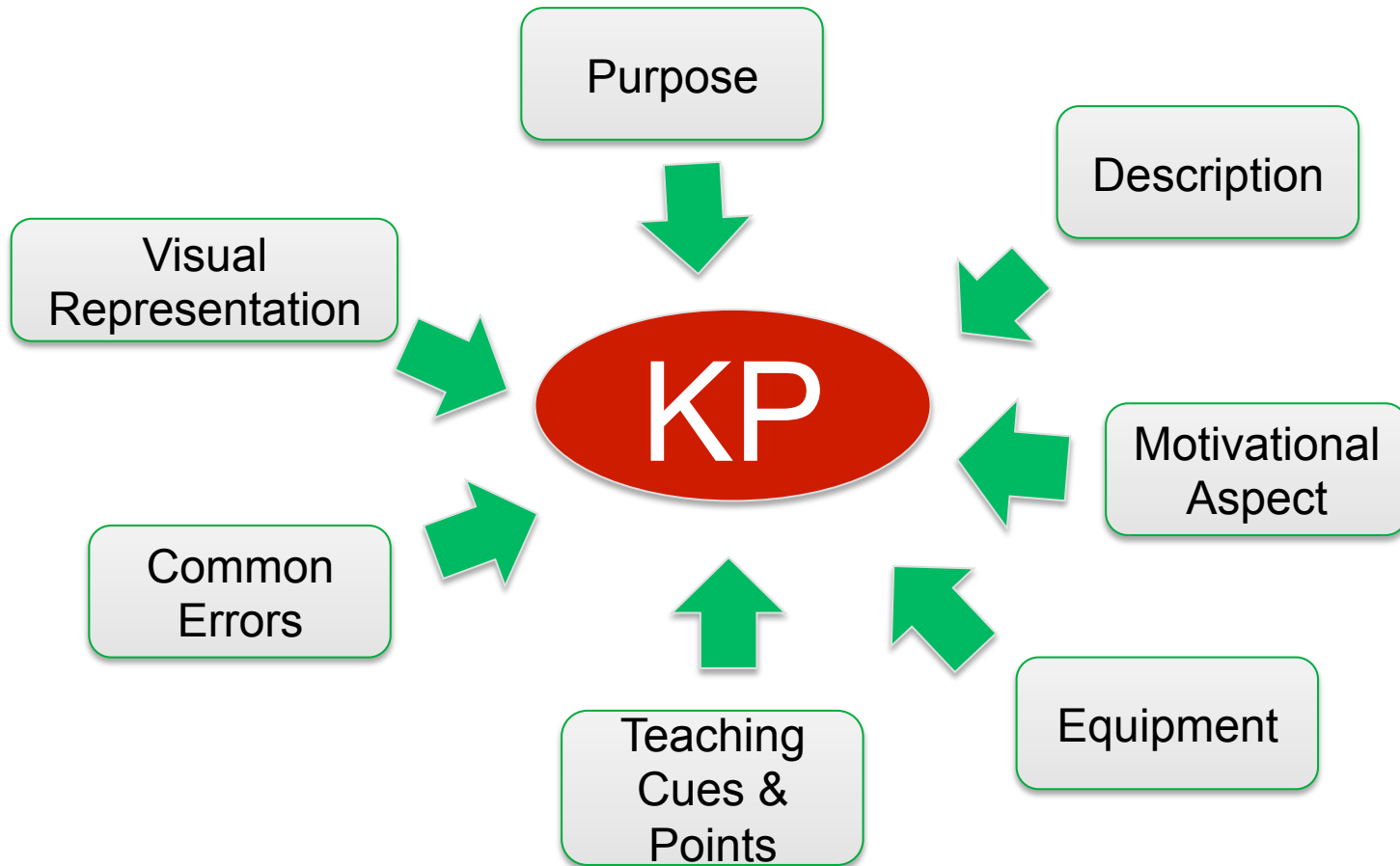
Teaching Cues and Points – critical elements and teaching points needed for success

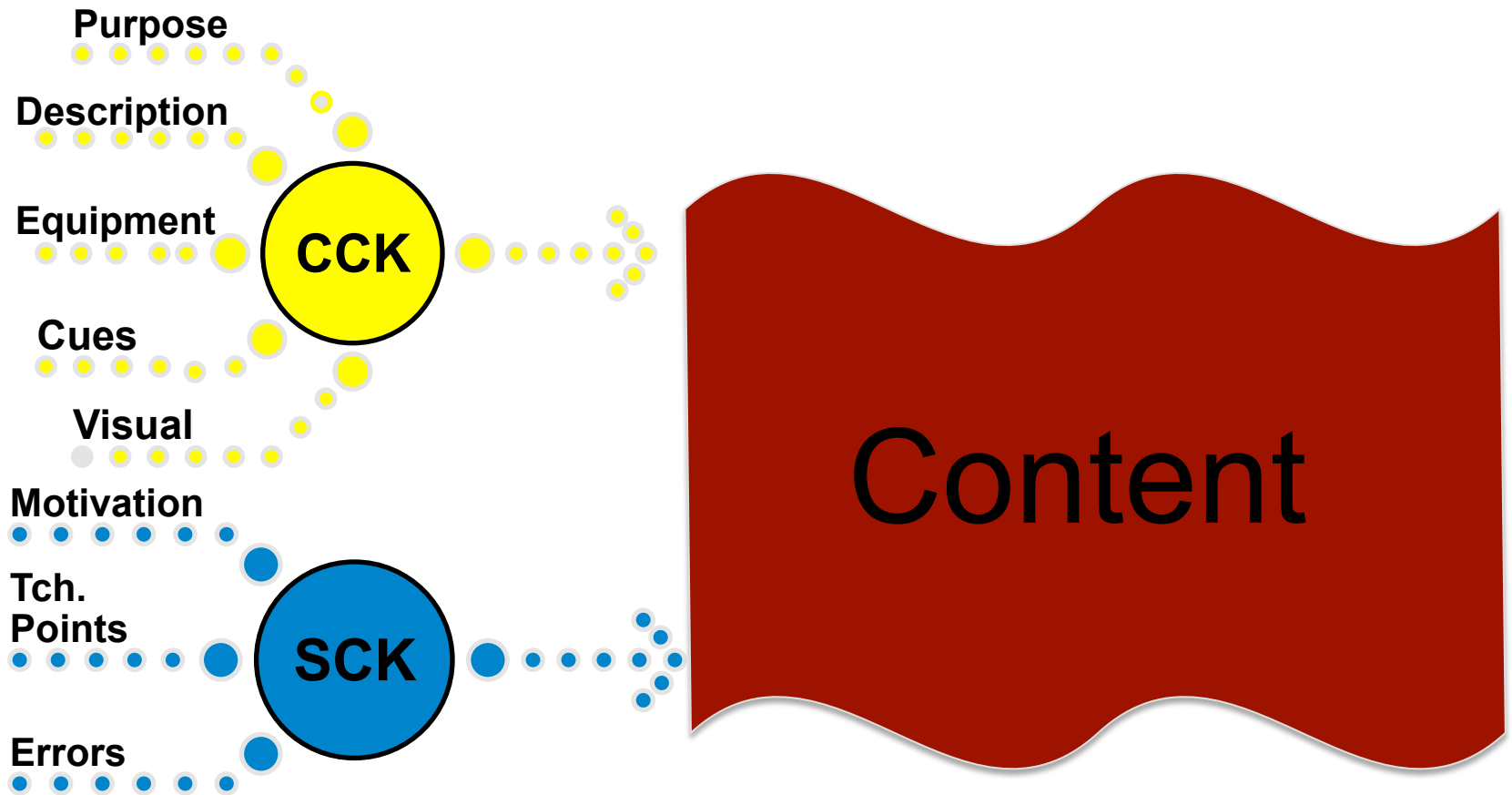
Common Errors – expected mistakes and how to correct them



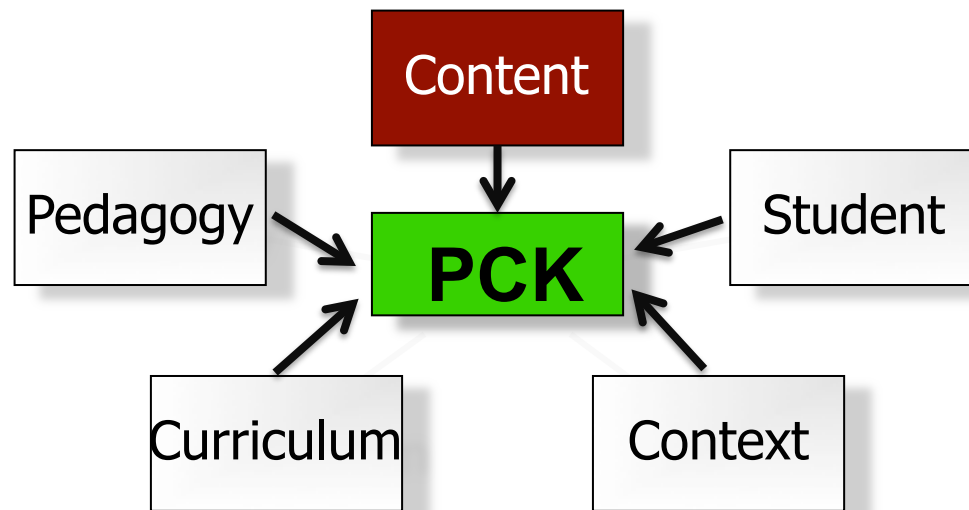
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COMPONENTS





Pedagogical Content Knowledge (PCK) Informed by:



Grossman (1990)▷



A set of assumptions that is made about your content:

- 1) What is the end game? Full-sided or small-sided (VB – 6v6 or 3v3 or 4v4)
- 2) How will your class be organized? Sport Education, TGFU, etc.
- 3) What's the relationship between technique and tactics for the content (TT easy to do early, badminton not so)
- 4) Modifications? (type of equipment, rules, etc.)
- 5) Working technique – how good do you want them to be?



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Dribbling in General Space

Individual Dribbling: Dominant, Non-dominant, cross over



Tool #2 – Knowledge Packet

Task 4: Now select two tasks from your content map, one from an early entry level and the other a higher level task. Using the KP template in your folder, create a knowledge packet for each task with your group.



Show & Tell Time



Any thoughts on how to close this out after they create the KPs???????



Working technique: Forehand overhead clear

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Thank You!

Contact information for us in your packet.
We would also appreciate any feedback you
have either in person or via email.