Sample Questions

These questions relate to the issue of modeling a student "mental state" in a user model for an Adaptive Learning Environment

1) Example of Great Question

What exactly is a "mental state"? How is it characterized,
and how can we be sure when a student has moved "from one to another"?
The characterization seems to imply an immediate jump from one to
another one of these states (whatever they are). I have some serious
trouble with this one, because I know that when I problem solve,
often, the solution "dawns" on me. This suggests that mental states
are not always available to me. Thus, how is the system supposed to
get access to this "state" when the subject is not even aware of it? 5

Great because the student shows to have given great thought to a concept that s/he found hard to understand, and manages to pinpoint some well-known issues in the definition of "mental state" (i.e., are these states well defined enough to be captured in a computational model and what do we actually know about how the transitions from these different states happen?)

2) Example of Good Question

The author claims that "menus do not interfere with the path of mental
states ..."
This assumption may not be true. The availability heuristic
from psychology suggests that the more accessible concepts are, the
more likely they are to be used. Alternatively, showing too many may
be overwhelming and negatively affect the usability of the system.

The question rightly points out a questionable assumption in the paper. It would have been great had it made a clearer argument to illustrate its point

3) Example of OK question

"A student's mental state is hidden from the system, and the system can
only infer what the states are from observations that may be generated
from these states. But the paper only addresses how to move from state
to state so as to form the model. But there can also be uncertainty in
the mapping of observations to states. If this is incorrect, then
strategies to determine the transitions between states will also be
incorrect"

OK but not great because, although the question makes a correct statement (i.e.. inferring the a mental state from external behaviors is a task permeated with uncertainty) it also includes an incorrect conclusion (i.e., that this uncertainty affects the correctness of transition strategies)

2) Example of Poor Question (it should be pretty clear why).

What exactly is a "mental state"?