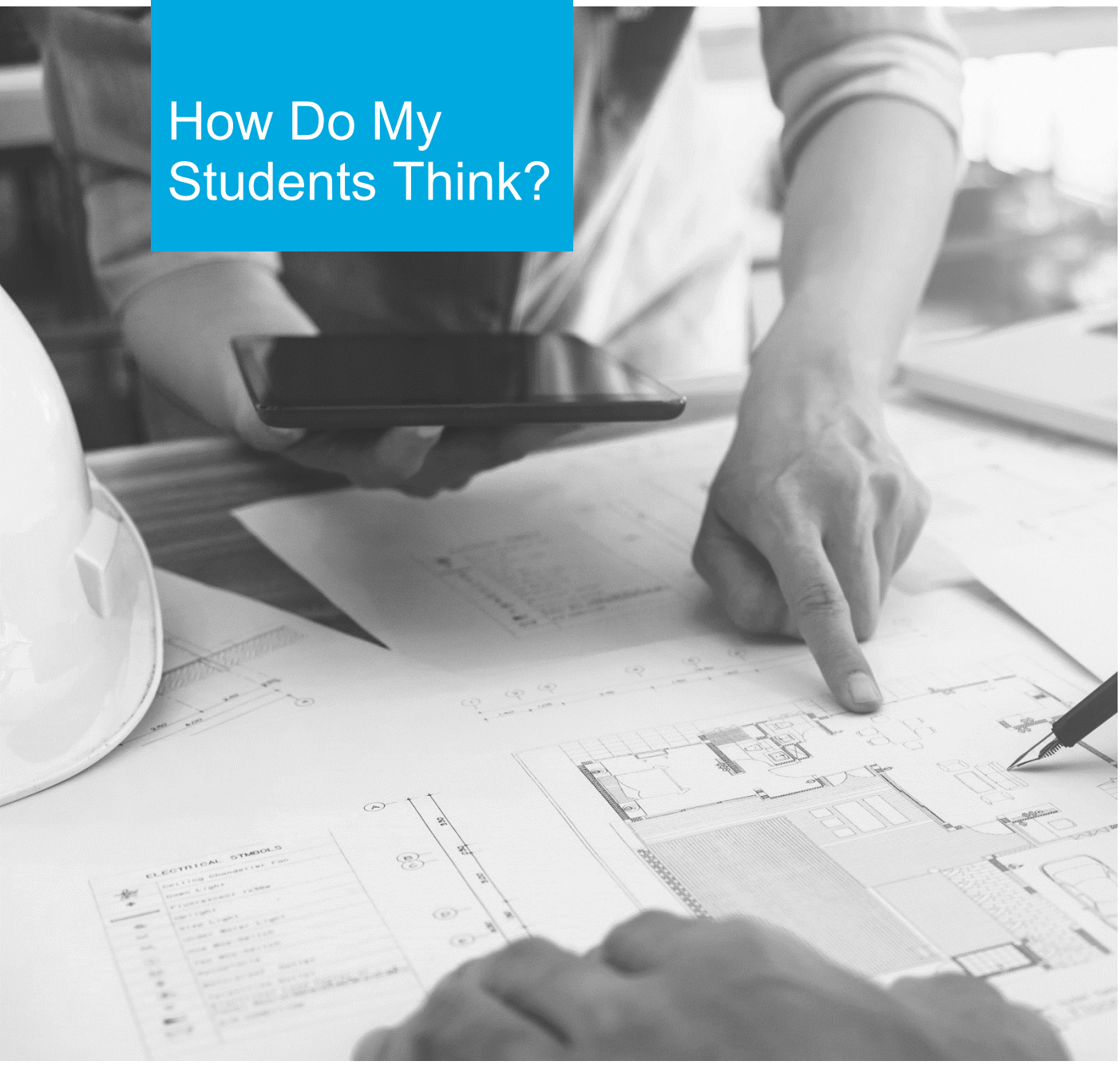
Universität Konstanz

How Do My Students Think?



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The Perry Scheme of Intellectual Development

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1. What's wrong with them?

> "Lucas misses memorization. He actually considers himself to be a top medical student: he gets very good grades; stacks of hundreds of index cards don't scare him; he is familiar with all the popular learning programs and apps that are available for medical students. This semester, however, he has to take a mandatory seminar based on problem-based learning. All of a sudden, Lukas is having to discuss topics, analyze complex situations, deal with vague questions... it's stressing him out. He feels that he's not sure how to succeed in this seminar. It's giving Lucas a stomachache; he just wants to know what he needs to do to get a top grade in the seminar."
>
> (Bach, 2019, p. 157)

Instructors often complain that students do not use their knowledge flexibly. This is not a new problem. Since ancient times, experts have complained about the desire of (usually) younger learners to have a black-and-white model of the world spoonfed to them; meanwhile, learners have always complained that their teachers have forgotten how hard it all is. And indeed, research shows that people like to think that others know what they themselves know (Nickerson, 2001). Experts tend to forget that they themselves once thought rather superficially and would have liked to have everything spoonfed to them in black and white.

So even though social media is certainly changing the landscape that younger people grow up in, there is no solid evidence that there is something actually *wrong* with the way today's students think. Instead, we instructors should assume that our students often think differently than we do simply because they're still novices; it is our job to help them develop the way they think and learn.

And how do students think exactly? There is no simple answer. However, William Perry (1968) formulated a useful theory decades ago. Students always have an idea of what knowledge *is* and what it means for their learning and the world. This idea can be consciously or unconsciously held by the students; it does not have to be global, but can differ from subject to subject, from situation to situation. The idea of what knowledge is also develops over time – to different degrees, at an individual pace. Perry's theory helps catgorize the different ideas about knowledge that students can have.

2. What ideas can students have about what knowledge *is*?

Perry (1968) distinguishes between four ideas about knowledge that significantly influence the thinking and actions of students – also called four "stages of intellectual development". He arranges these four stages hierarchically: The ideal development of a young person ranges from dualism to commitment to relativism. However, this is only a rough framework.

This is how students can think: Four stages

Stage of intellectual maturity	What is knowledge?	What is learning?	When do students get frustrated?
Dualism	Knowledge is black and white, it consists of facts and correct answers. Ambiguity is not tolerated. Experts already know everything; students need to learn it.	Learning is listening, reading, jotting things down, memorizing them, and reproducing them.	If they are to think independently, to form their own opinion, to transfer knowledge to a new context. Teachers should simply tell them what they want.
Multiplicity	Knowledge is simply a matter of opinion. Lecturers just have their own opinion. That of the learners is worth just as much. Nothing is set in stone; everything is ambiguous and must remain so.	Learning is discovering something new and forming an opinion about it.	When teachers force them to justify and defend their opinion. When there does seem to be in incorrect answer sometimes. Isn't everything up for discussion?
Relativism	Knowledge is based on evidence and arguments. These can be stronger or weaker.	Learning is to look deeply at theories and models, to analyze their advantages and disadvantages; in doing so, one tries to become aware of one's own subjective influences and to extinguish them.	When they have to reproduce facts and "correct answers" without critically examining them. When others do not argue logically.
Commitment in relativism	Knowledge requires both a search for objective truth through analysis and logic, but also a personal statement based on one's own values.	Learning means mindfully combining analysis, argumentation, reflection and empathy – it's about the knowledge, but also its origin and the people involved in its creation.	When teachers leave no room for personality, empathy, and reflection; or when they claim, according to the motto of *multiplicity,* that all opinions are equally correct.

Table 1: Stages of intellectual development according to Perry (1968).

People move between these levels. If being at one level, e.g. multiplicity, causes too much frustration in a certain situation, they might "withdraw", e.g. in the direction of dualism. They may be able to skip stages or switch back and forth between two stages repeatedly. It all depends on the environment and prior experiences. For instance, I sit comfortably at the *commintment in relativism* level regarding my own work, but when I do my taxes, I am definitely in dualism mode.

In addition to people being at different levels in different situations, instructors have to deal with heterogenous groups. Rarely will all students who attend a course have the same level of intellectual maturity. This is very challenging: some students may get bored when they have to memorize and reproduce content, others may complain when there is a complex task. Instructors can never please everyone.

So what can instructors do to ensure that students...

a) evolve towards commitment in relativism…

b) … without feeling overwhelmed, complaining about it, refusing to actively participate, and possibly "withdrawing" even further in their development?

3. Can we change how they think?

"A nudge is better than a shove in these matters" (Kloss, 1994, p. 153)

We shouldn't throw students in the deep end and expect them to be able to handle a variety of complex, contradictory content. Instead, we can include small nudges in our teaching to slowly accustom students to more complex thinking (Kloss, 1994). Here's a model of what those nudges might look like.

1. **Experience**: Confront students with tasks that require more than just superficial dualism, e.g. with 2-3 alternative or paradoxical points of view. Use conditional language instead of describing everything in safe, absolute words (e.g. *"That suggests..."* instead of *"That shows..."*).

2. **Make it explicit**: While doing this, openly address the fact that this level of complexity and ambiguity is challenging and that we all have to find a way to deal with it.

3. **Let them try it out**: Just like in a driving lesson, give students time to try out these more complex tasks themselves.

4. **Ask for explanations**: Ask students to make their approaches explicit. This will help them become mindful of their thoughts and feelings around the new complex task.

5. **Offer structure**: While students try to find a way to deal with complexity, be there to advise them and help them structure their thinking.

6. **Show empathy**: If students find it difficult, then show understanding, perhaps share that this change in thinking was also difficult for you in the past.

7. **Have self-compassion**: Also be kind to *yourself*, because teaching is a challenging task, and influencing students' thinking has always been difficult for lecturers (as mentioned above).

These suggestions are deliberately kept rather abstract so that they can be applied no matter in which context we teach.

As a basis for planning a strategy, it would of course be helpful to know how students think before the semester begins. You could find that out with the help of an anonymous online survey. How about the following survey question?

In this course, it would be particularly important to me that...

... the teacher makes it clear what content I need to learn and how I will be tested.

... the teacher takes all opinions equally seriously.

... all points of view have a logical and objective foundation.

... all participants combine scientific methods with their own values in order to develop their own points of view.

This works best if students are allowed to give a rating for each statement – so instead of multiple-choice, where you have to choose an answer, I recommend a Likert scale which might ask students to rate their agreement on a scale from, say, 1 (not important at all) to 5 (very important).

Be sure to share the results of this survey in a short video or in class. This is always interesting for the students, and it gives you a chance to explain why you asked them about it (this brings you back to point 2, "Make it explicit"). You may even want to explain Perry's scheme.

4. Takeaway: We should consider how students think

It's a good idea to encourage students to be more mindful and more aware of how they're learning; but we should be prepared for the fact that some students will be irritated if we do this because they're in the mindset of dualism. In order to get students used to more complex thinking, we can address the different way to think explicitly and gradually get them used to diverse perspectives where there are no black-and-white solutions. Empathy and transparency are essential in this process.

5. References

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Nickerson, R. S. (2001). The Projective Way of Knowing: A Useful Heuristic That Sometimes Misleads. *Current Directions in Psychological Science, 10*(5), 168–172. https://doi.org/10.1111/1467-8721.00141

Perry, W. G. (1968). *Patterns of Development in Thought and Values of Students in a Liberal Arts College: A Validation of a Scheme*. Final Report. Holt, Rinehart, & Winston.

6. Exercises

Suggestions for answering these questions can be found at the end of the document.

Exercise 1

Please turn back to the beginning of the document, to Lucas's story.

1. What level of intellectual development do you think Lukas is at in terms of his medical studies? At what level would he have to be in order to feel more comfortable in the new course?

2. What could the teacher have done in the problem-based learning seminar so that Lucas and similar students would better cope with the seminar?

Exercise 2

1. Is it possible for you to ask about the intellectual development of your students with the help of a survey before the semester? If so, what specific question(s) would you use for this? Write your ideas for questions below.

7. Exercise solutions and suggestions

Exercise 1

1. Lucas seems to be caught up in dualism, because he just wants to know the right answer. If he were in relativism or commitment in relativism, he would certainly be better off, as he would then consider it normal to discuss and deal with complex issues. Multiplicity would not help Lukas much, because he would feel comfortable with discussions, but not with their assessment. He would still be likely to worry about how to get a top grade.

2. I think the most important thing is that the teacher explicitly mention that the seminar follows a completely different principle than their previous classes. They should also remind students again and again – not just once in the first session.

   It would be helpful if they also spoke transparently about their own development and gave students the feeling that the challenges they are experiencing are normal and even part of a healthy process. Again, it's best to run this through the event as a theme, e.g. in the form of regular short anonymous surveys to inquire about students' stress level and reactions to the problem-based learning. The instructor should then the share results, address the relevance of the tasks/methods again, and emphasize that it's okay to feel challenged and uncertain.

   If, in the anonymous surveys, students make suggestions for concrete changes that would help them, then the instructor should check whether those changes seem helpful and feasible, and then either implement them or not. In any case, they should tell students why they're (not) implementing their suggestions.

Exercise 2

An example can be found in the text (chapter 3).

Other ideas:

Open questions

- What needs to happen to make you feel like you've gotten a fair grade?
- Do you believe that scientific findings are always correct?

Likert scale (rating from "disagree" to "strongly agree")

- When I encounter arguments, theories or models, I expect them to be completely true.
- When I encounter arguments, theories or models, I expect them to initially only represent the opinion of the respective researchers.

- When I encounter arguments, theories or models, I expect them to contain logical arguments.
- When I encounter arguments, theories or models, I expect them to contain logical arguments based on facts and the values of the researchers.

- [Subject X] is based on objective facts.
- [Subject X] is based on authorities' opinions.
- [Subject X] is based on logical arguments based on facts.
- [Subject X] is based on logical arguments that reconcile facts and personal values.

- It bothers me when I don't know what's right and what's wrong.
- It bothers me when my views are evaluated, because I have a right to my opinions.
- It bothers me when arguments are inconclusive or based on a flawed state of affairs.
- It bothers me when professionals pretend that their arguments have nothing to do with their personal values.