

Get an A in TOK Essay Guide

Thanks for downloading this guide – I hope it helps you get an A. Or a B. But really an A.

If you need more help, send me your draft! I got your back! [Click this link to find my online store.](#) Whether you need me to provide a quick check and predicted grade, or you want to zoom and shoot me multiple drafts, I'm here to help you out! Revisions start at USD\$35!

I highly recommend using one of my organizers available from my website. [Click here to get my free download packet](#) and get started drafting!

If you need extra help, and I know you do, you can access my fully online, on-demand TOK course with a discount! [Go to TOKMasterclass.com](#) and use code YOUTUBESUBSCRIBER to save 25%! This also includes a database of all of my research an examples.

Remember that my other guides & breakdowns are all available on my [YouTube channel](#) and [website!](#)

Don't have any money? Well guess what? This next stuff is free. Let's go!

The background of the slide is a semi-transparent image of a man with curly hair, wearing a suit and tie, speaking and gesturing with his hands. The text is overlaid on this image.

GET AN A IN

Title 2:

How can we reconcile the opposing demands for specialization and generalization in the production of knowledge? Discuss with reference to mathematics and one other area of knowledge.

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Thoughts on Title

Your goal is to come up with a way to reconcile the demands. All examples should feed your way of addressing the “how” question.

For each piece of evidence, address why it might be good to be specialized/general. Bring up the benefits, then come up with a way of reconciling the demand. What should we do?

Also, this title is a challenge! Don't do it unless you really want to.

Specialization in Math

Pure & Applied Maths

Maths for Uni -

<https://www.youtube.com/watch?v=tnd7LKGid80>

Veritas Forum -

<https://www.youtube.com/watch?v=3whQJXdVFq8>

Is there such thing as pure maths? Or do we just not know of a way to use it yet?

Demands for applied maths happen in the technology industry. There is a lot of money to be made

Max Tegmark – Is Reality a Mathematical Structure

<https://www.youtube.com/watch?v=PTF-hHGbQ6s>

Tegmark believes something very unique and specific – that reality is a mathematical proof. His approach demonstrates the demand for specialization – if he's right he can explain the most important question: why are we here?

Let's Be Honest About Mathematics

<https://www.youtube.com/watch?v=PTF-hHGbQ6s>

There's a lot of debate about how math works in economics. If you specialize in math in the field of economics, you have lots of power. This may not be a good thing.

In maths, there is a direct application for specialization. You can often do something additional when you specialize in math. Application creates the demand.

Generalization

Michio Kaku – is God a Mathematician

<https://www.youtube.com/watch?v=jremlZvNDuk>

In this video Kaku shares about how one AOK doesn't exist independently of others. He explores how physics and math intersect. As a theoretical physicist he might say he's not a specialist because what he does applies everywhere.

Understanding the Process of Generalization in Mathematics through Activity Theory

<https://www.ijlter.org/index.php/ijlter/article/download/1022/pdf#:~:text=The%20ability%20to%20do%20theoretical,that%20are%20new%20to%20them>

In this article the author says that generalization provides two helpful things – first of all, it helps us transmit information. Secondly, it provides the building blocks for more demanding problems and proofs.

Natural & Human Sciences

Pressure to Produce

<https://tradeoffs.org/2020/05/26/science-under-pressure/>

<https://www.sacbee.com/opinion/california-forum/article219786810.html>

<https://www.latimes.com/archives/la-xpm-2012-oct-24-la-sci-medical-studies-uncertain-20121024-story.html>

Specialization is in high demand in the sciences. These articles address the demand to produce groundbreaking discoveries.

In the Human Sciences, specialized knowledge is not in demand – scientists look to produce knowledge that explains all of humanity, not a specialized group.

In the LA times article it talks about how discoveries that claim a “very large effect” are often not actually reliable. So why do these claims still happen? Because scientists are under pressure to produce and publish.

The God Equation – Michio Kaku

https://en.wikipedia.org/wiki/The_God_Equation
<https://www.youtube.com/watch?v=zaU2MDsRpZA>

If you want to explore Kaku more you can learn about his claims in The God Equation. He isn't focused on explaining specialized knowledge but rather explaining all of reality. In 11 dimensions. Or something.

Would Kaku be as famous if he was claiming something more specialized? Probably not. We are interested because he is making a large, general claim about existence.

Specialized Knowledge

To find something about specialized knowledge you can research nearly any discovery in the Natural Sciences. Think about discoveries that are so focused and specialized that they discovered one thing. I'll use an easy example so that you can find something more interesting.

If we look at the discovery of DNA, by McLintock and Watson & Crick, we see that there was a demand to explain genetics. They were looking to explain something very specific: traits. McLintock was looking

to explain corn! If they were trying to explore something more general they probably wouldn't find anything.

So with specialization in the sciences, you run the risk of not making discoveries if you are too generalized in what you are trying to produce.



Conclusion & Analysis

So now we have a few of examples of specializing in things or using general knowledge in different contexts. We can understand that mathematical knowledge is in demand – all of these are necessary. So if you can only be one or the other, what should we do? How do we reconcile the need for both?

One option is to say that we shouldn't reconcile it. One is better than the other. This is a valid approach, just justify your opinion by evaluating one side over the other. "Specialization is more important," you might say, "so the reconciliation doesn't need to happen."

Another option might be to explore how there might not be that big of a difference. Maybe specialization can lead to generalization? Or can generalization lead to specialization? Maybe one is the natural result of the other? Looking at how pure maths in geometry can be applied in other fields may show that specialization could just be a myth.