

Study Through Fishing

Introduction

"You don't know what you don't know!"

— Donald Rumsfeld

That message (ref [1]) was conveyed to the US press corps during the Iraq War (2003-2011). The words also apply **when you're searching on the Internet!!!** This is an understatement when searching for a solution through a "search box" in a web browser. Despite the vast knowledge that the internet has, still "you have to know what to ask for." A **Good** textbook, such as the ones referenced here (ref [2]), can be used for "fishing" to find solutions.

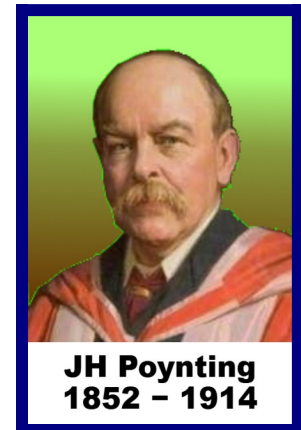
"You begin to see what you don't know in a Good reference book!"

— Everett George

When "fishing" for a technical solution in a **Good** science reference, you can find a solution without knowing one exists. A **Good** science book gives you an overview of what's available in its chosen subject. A student can flip through a science reference book not knowing the solution, and possibly find one.

A Case Study that Proves my "Point"

I went "fishing" in my scientific reference books for equations describing how a star's image changes due to speeds close to the speed of light. In reference [3], I came upon the Poynting Vector formulated by J.H. Poynting (ref [4]). The Poynting Vector (**S**) directly (ref [5]) defines "energy flow" of light beams as a cross product between electric & magnetic (**E** & **B**) fields. It certainly is the energy flow of a light beam that registers in one's eye. This same reference also had relativistic vector transformation equations for **E** & **B** fields. A physicist combines these equations, performs the substitutions & gets the answer!



Conclusion

The internet duplicates the knowledge of the reference used here, but the student has to know what he / she is looking for. "Fishing" exposure to find a technical solution is almost impossible on the internet due to the amount of internet knowledge, not so with a **Good** technical book.

References

[1] Upwards, <https://upwords.ca/>, 2022.

- [2] George, Everett, Ideas Contributions, [*A Good Reference Book List*](#), 2023.
- [3] Jackson, John David, PhD, [*Classical Electrodynamics*](#), 3rd Ed, Wiley, 1998.
- [4] Wikipedia.org, [John H. Poynting](#), 2022.
- [5] Wikipedia.org, [Poynting Vector](#), 2022.

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