

平成28年度

推 薦 入 学
学 習 能 力 適 性 検 査

英 語

注意：答えはすべて解答用紙に記入しなさい。

藤田保健衛生大学医学部

第1問 **phonics** と **whole language approach** という2つの教育法について論じた次の文章を読んで、以下の問いに答えなさい。

My kids entered first grade in the mid-1990s, attending a school that was considered progressive. As a teacher, I'm all in favor of using the most advanced pedagogical techniques. But the work my kids brought home confounded me — especially in what the school called “language arts.”

Each week my kids brought home a spelling list to learn — just as I had done at their age. But the spelling lists were bizarre — *back, after, use, two, how, our, work, first, well, way*. These were just random lists of common words. Back when I was in grade school, we learned lists of words with common patterns — *bought, brought, ought, sought, fought*, and so on.

One day my daughter showed me a “story” she'd written in class. It was just a few scrawled lines, and many of the words — even common ones — were misspelled. Fearing the worst, as parents always do, I dreaded the academic struggles my dyslexic daughter would face. But wait — the teacher had pasted a gold star and written “Very Good!” on it.

At the next parent-teacher conference, I confronted the instructor about her lax standards. “Don't you teach these kids how to spell, how to sound out words?” I asked.

She gave me a forbearing smile that I interpreted as contemptuous. I wasn't just some parent railing, “That's not the way they did it back in my day.” I was still a graduate student at the time, but I considered myself fairly up-to-speed on the latest research in the psychology of language.

“We use a whole language approach,” she explained. “We believe that reading and writing are natural acts. If you provide enough exposure to print material, children will discover the principles of reading and writing on their own.”

“Why not just teach them how to spell and sound out words?” I asked.

“Phonics puts too much emphasis on decoding the written word,” she said. “The whole language approach is better because the emphasis is on understanding and interpreting texts.”

Never argue with a teacher. She has all the power, even if she's wrong. We taught our kids reading and spelling through [ア] at home. Because of our efforts — I'd like to think — they're both strong readers and writers as adults.

Some version of the whole language approach is still used in many schools across the U.S., (あ) the fact that there's little scientific support for its effectiveness. It's a pedagogical philosophy that contradicts what is already known about human learning and memory processes.

As Australian psychologist John Sweller points out in the most recent issue of *Current Directions in Psychological Science*, there are two types of human knowledge, each with its own set of learning mechanisms. “Primary knowledge” is picked up naturally and effortlessly through experience and social interactions, while “secondary knowledge” must be explicitly taught.

Primary knowledge includes all the stuff you need to know to survive as a human. Language is a perfect example. You aren't born knowing English, but evolution has honed a set of learning mechanisms so you can quickly acquire the language of those around you.

It's true that children "discover" language through experience and social interaction. However, the fallacy in the "whole language" philosophy is that reading is simply a visual form of language.

Reading is *not* language. Rather, it's a decoding process that converts visual symbols into spoken language. When we learn to read, we pronounce each word out loud. As our skill improves, we learn to read silently. But that inner voice never goes away, no matter how proficient we are at reading.

When readers "engage in a text," they're not dealing with the printed symbols on the page. Instead, they're working with the spoken discourse they've recreated in their heads as a result of decoding that text.

There's nothing at all natural about learning to read. It's a recent cultural invention, with no time for evolution to hone special learning mechanisms for it. In fact, learning to read requires years of effort — and learning to write even more. It's no different from learning to play a musical instrument or a sport or a game like chess. All of these are examples of Sweller's "secondary knowledge," in that they're only acquired through direct instruction.

(い) explicit phonics training, the text remains indecipherable, and hence incomprehensible. Children from homes where literacy is valued will eventually work out the code, mainly with some informal [イ] from their parents. But children from disadvantaged homes don't come to school with the tools to "discover" reading. Furthermore, explicit phonics training helps children with dyslexia gain some level of functional literacy.

[ウ] drills can certainly be dull, but they don't have to be. The mission of educators isn't to come up with fanciful pedagogies based on wishful thinking. Rather, it's to find ways to get students engaged. That way, they'll do the grunt work needed to learn the skills of our culture. Children won't "discover" reading through exposure to print any more than I can "pick up" the piano by listening to my wife play for twenty years.

<https://www.psychologytoday.com/blog/talking-apes/201507/whole-language-or-no-language> (一部改変)

注 pedagogical : 教育学の	confound : 当惑させる	bizarre : 奇妙な
scrawl : なぐり書きする	dyslexic : 失読症(dyslexia)の	lax : ゆるい
forbearing : 寛容な	contemptuous : 侮蔑的、傲慢な	rail : ののしる
up-to-speed : 精通している	hone : 磨き上げる	fallacy : 誤り
proficient : 熟達した	indecipherable : 判読できない	grunt work : 退屈な仕事

問 1. 自分の子供の教育に対する著者の態度に関して、本文の内容と合致するものを次の中から2つ選び、その番号を答えなさい。

- (1) 学校教育のせいで子供の読み書き能力が十分発達しなかったことを後悔している。
- (2) 学校の教育は不適切だと思い、交渉を通じて学校の教育方法を変えさせた。
- (3) 学校の教育方針は基本的には適切なので、この方針をさらに徹底させてほしいと思った。
- (4) 子供が学校で受けている教育より自分が受けてきた教育の方が優れている、と思った。
- (5) 先進的な教育を行う学校だという評判で期待したが、実態を見てがっかりした。

問 2. 下線部《A》‘emphasis’の動詞形、《B》‘evolution’の動詞形、《C》‘convert’の名詞形を書きなさい。(ただし、‘-ing’、‘-er’、‘-or’を語尾とする名詞形は除外する。)

問 3. 空所 [ア] ~ [ウ] に ‘phonics’ か ‘whole language approach’ のいずれかを入れるとしたとき、‘phonics’を入れるべき空所はどれか。その空所名をすべて答えなさい。ひとつもない場合には「なし」と答えなさい。(ただし、空所 [ウ] では冒頭の文字が大文字になる。)

問 4. 著者は、PTAの会合で小学校の先生と教育法についての議論を続けなかったが、その理由として最も適切なものを1つ選び、その番号を答えなさい。

- (1) 多くの父母がいる会合の席で先生とそれ以上議論することは避けたかったから
- (2) 議論を続けても平行線になるだけであろうと容易に想像できたから
- (3) 小学校では先生が絶大な力をもっているので、逆らってもしかたがないから
- (4) 先生の主張にはもっともな点があり、あえて反対する必要はないと思ったから
- (5) 先生の主張を否定するのに十分なだけの知識をもちあわせていなかったから

問 5. 空所 (あ) に入れるのに最も適切な語句を1つ選び、その番号を答えなさい。

- (1) based on
- (2) behind
- (3) despite
- (4) followed by
- (5) instead of

問 6. 著者の考えに基づけば、次の(1)～(8)を Sweller のいう primary knowledge と secondary knowledge に分類するとき primary knowledge の方に属すると思われるものはどれか。その番号をすべて答えなさい。ひとつもない場合には「なし」と答えなさい。

- | | |
|---------------------|---------------------|
| (1) 文字を読むこと | (2) 文字を書くこと |
| (3) 言葉を話すこと | (4) 将棋を指すこと |
| (5) ピアノの演奏 | (6) 生きていくのに不可欠な事柄 |
| (7) 経験などから自然に学び取る事柄 | (8) 教え込まれて初めて身に付く事柄 |

問 7. 空所 (い) に入れるのに最も適切な語句を 1 つ選び、その番号を答えなさい。

- | | | |
|------------------|---------------|---------------|
| (1) Depending on | (2) Following | (3) Including |
| (4) Instead of | (5) Without | |

問 8. 著者によれば、書かれた文章を理解するには 2 つの段階が必要である。その第 1 の段階は【 甲 】する作業であり、第 2 段階は【 乙 】する作業である。
著者はこの第 1 段階を【 丙 】が、whole language approach はそれを【 丁 】。

① 空所【 甲 】、【 乙 】に入れるのにふさわしい言葉を、それぞれ 10～15 文字の日本語で答えなさい。

② 空所【 丙 】、【 丁 】に入れるのに最も適切なものを次の中からそれぞれ 1 つ選び、その番号を答えなさい。

- (1) 言語活動の一形態と見なして、その教育に重点を置く
- (2) 言語活動の一形態と見なして、その教育に重点を置かない
- (3) 言語活動とは見なさず、その教育に重点を置く
- (4) 言語活動とは見なさず、その教育に重点を置かない

第2問 次の英文を読んで、後の問いに答えなさい。

Drug development for Alzheimer's disease is a graveyard for clinical trials, with more than 120 failures over the past 20 years. The handful of approved treatments only provide modest and temporary relief for symptoms such as memory loss; none halt the disease's progress.

Against that gloomy backdrop come provocative results from two high-profile clinical trials, presented today at the Alzheimer's Association International Conference in Washington, D.C. Both trials tested antibodies that latch onto β amyloid, a protein that forms sticky masses in the brains of people with Alzheimer's. One reported that the treatment slowed cognitive decline; the other found that the antibody lowered brain levels of amyloid, [ア] of Alzheimer's.

The findings, presented at the meeting by biotech companies Biogen and Eli Lilly, provide some of the first "clear-cut" evidence [イ] targeting the β amyloid protein is a promising approach to Alzheimer's treatment, says Dennis Selkoe, a neuroscientist at Harvard University and a major proponent of the so-called amyloid hypothesis. But (あ).

Eli Lilly's antibody, solanezumab, had failed to show any benefit over placebo in a previous trial in people with mild-to-moderate Alzheimer's, as well as Lilly's own study in 2012. Today, however, (い), which Lilly allowed to continue taking the drug after the 2012 trial ended. A control group in the original trial that then was started on the drug later showed similar improvements.

Still, the Lilly study didn't actually measure amyloid decline, Selkoe notes: "It might go down, but we don't know that." Participants in the Lilly trial also failed to show significant benefit in two other important cognitive tests—a result which "warrants some caution in drawing firm conclusions from these analyses," the company acknowledged in a statement. In hopes of seeing clearer benefits, (う).

Biogen's antibody, aducanumab, also has a mixed record. It had set the Alzheimer's community abuzz when the company announced positive results from an early stage study. After administering several different doses of the drug to 166 patients who had been diagnosed with early stage Alzheimer's, the company reported that 27 people who had received the highest dose of 10 mg per kilogram showed significant cognitive benefits over controls, as well as reduced levels of protein.

But that dose caused brain swelling and microscopic hemorrhages in some cases, so the company decided to try a smaller, 6 mg dose. Today, the company reported deflating results from a follow-up trial: Over 54 weeks, the 6 mg dose failed to show any significant effects on cognition, although it did reduce levels of amyloid in the brain. The stock market, for one, judged the results harshly, initially sending the price of Biogen's shares down after the data came out. Despite the setback, this year the company will launch an 18-month phase III trial with 2700 participants in the United States, company representative Jeff Sevigny says.

Much rides on the success of these follow-up trials, says neurologist Rakez Kaye of the University of Texas Medical Branch in Galveston, Texas. “If they fail later and we get another black eye, that will be tough.”

Selkoe argues that the new Biogen data still suggest that other approaches to reducing amyloid, such as drugs that block the production and transport of molecules that contribute to amyloid buildup as well as vaccines that prime the immune system to break down plaques, should be “vigorously” pursued.

But Kaye cautions that the tantalizing results shouldn’t overshadow other approaches to Alzheimer’s treatment. Though many researchers now agree that β amyloid is an important trigger for Alzheimer’s, most also believe that secondary processes, such as the buildup of another protein called tau, drive the disease in its later stages. “If we go all in on β amyloid and ignore other therapeutic approaches, that will be devastating,” he says.

<http://news.sciencemag.org/health/2015/07/antibody-drugs-alzheimers-stir-hope-and-doubts> (一部改変)

注 backdrop: 背景	high-profile: 脚光を浴びる	antibody: 抗体
latch: 付着する	amyloid: アミロイド	proponent: 支持者
placebo: 偽薬	control group: 偽薬を投与される群	warrant: 根拠となる
abuzz: 騒然とした	hemorrhage: 出血	deflate: 意気消沈させる
share: 株	setback: 頓挫	prime: 刺激する
plaque: 沈着物	tantalizing: 興味深い	

問 1. 空所 [ア] には次の語句をある順番に並べ替えた表現が入る。2 番目と 4 番目に入る語句の番号を答えなさい。

- (1) at the heart (2) have argued (3) is
(4) many scientists (5) which

問 2. 空所 [イ] に入れるのに最も適切な語を 1 つ選び、その番号を答えなさい。

- (1) against (2) of (3) that (4) which

問 3. Biogen 社や Eli Lilly 社が研究しているアルツハイマー病の治療法はどのような仕組みで病状の悪化を遅らせるのか。20 字以内の日本語で書きなさい。

問 4. 空所 (あ) ~ (う) には次の 3 つの内のいずれかが入る。各空所に入るものの番号を答えなさい。

- (1) the company is currently running a much larger, phase III trial, scheduled to end in October 2016, only in people with mild Alzheimer's disease
- (2) the company reported that the drug seemed to slow cognitive decline in one standard measure by roughly 34% in a subset of patients with mild Alzheimer's
- (3) the small cognitive benefits and the fact that one trial didn't show any reduction in the amyloid in people's brains left plenty of room for skepticism

問 5 Biogen 社の aducanumab という抗体の臨床試験で、体重 1kg あたりの投与量を 10mg から 6mg に減らした理由とその結果をそれぞれ日本語で書きなさい。

問 6. 下線部の 'black eye' に最も意味の近いものを 1 つ選び、その番号を答えなさい。

- | | |
|------------------------------------|-------------------------|
| (1) admiration for our achievement | (2) criminal penalty |
| (3) damage to our reputation | (4) success in business |

問 7. 本文の内容に合致するものを 2 つ選び、その番号を答えなさい。

- (1) Drug development for Alzheimer's has failed to obtain a significant outcome for 20 years and today there is still no drug treatment that offers a complete cure.
- (2) In the 2012 trial, Lilly's antibody, solanezumab, showed significant cognitive benefits in people with mild-to-moderate Alzheimer's.
- (3) The price of Biogen's stock fell dramatically because a falsification of the data from clinical trials of the antibody, aducanumab, was revealed.
- (4) Disappointed at the data from Biogen's trials, Selkoe became skeptical of the amyloid hypothesis and turned to other approaches to Alzheimer's treatment.
- (5) According to Kaye, many researchers agree that although β amyloid is a trigger for Alzheimer's, other factors are responsible for its later-stage progression.