

## The art of writing a research paper that is internationally acceptable, according to a reviewer

Tiwari, Ajay Krishna

Academician, Economist and Ph.D. Guide

Tiwari, Ayushi

MBBS & BNYS

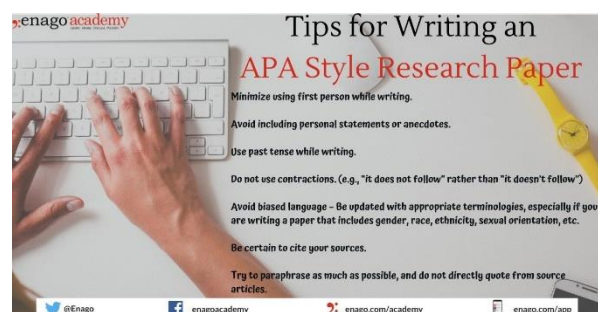
### Abstract

This research paper has been written for those researchers striving to do research in the educational and economic fields. Concerns faced by young researchers specializing in educational psychology the current situation surrounding young researchers in recent years is difficult. Against the background of intense performance competition, there are many cases, including those hired as project researchers, who have to learn, measure, analyses and even learn about indicators outside their area of expertise in a short period of time. It is necessary to write documents. Specifically, the field of educational psychology aims to elucidate the mechanisms of human mind and behavior from various educational responses, and the indicators handled are broad. Furthermore, care must be taken when handling each educational index. Therefore, it is essential to follow strong previous research in experimental procedures, measurement, analysis, and interpretation of educational responses. To gain such information, it is necessary to read related papers and conduct further experiments, analysis and persistence.

*Keywords:* research paper, researchers, experimental procedures, educational psychology

### Guidelines for researchers of educational and economic psychology-

If you are in an environment where there is a researcher familiar with the index nearby, you will be able to conduct your research



while receiving proper guidance. However, in many cases, such an environment may not necessarily exist. Holding a Webinar To provide an opportunity to learn the grammar of representative educational psychology indicators, the Japan Society of Physiological Psychology Young People's Association held "Paper Writing Seminar from a Reviewer's Perspective - How to Write an Acceptable Paper". Webinar titled "Ha-" (held online on demand on September 6, 2022). We have invited professors who are experts in specific indicators such as autonomic nervous system indicators, endocrine system indicators, and event-related potential indicators, and they will discuss points to consider when writing papers, desirable experimental plans, and ways to improve research quality. will discuss. Thank you for your conversation. The biggest takeaway from this webinar was that it became clear that learning the process and points to keep in mind while writing a

paper can be a shortcut to producing good research.

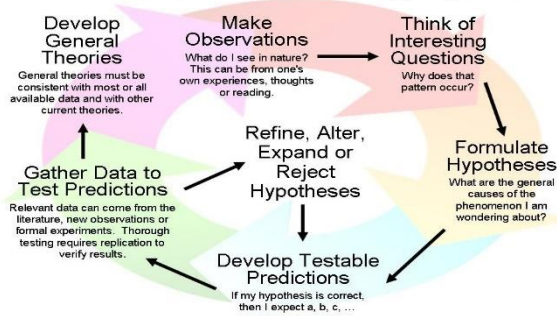
### Summary of changes in paper review-

We have prepared a report to share useful information received from professors with researchers who handle multiple educational indicators, regardless of their research background. About this paper in sections 2 to 4, we will discuss points to consider when writing a paper, including autonomic nervous system indicators for Dr Yosuke Taluka, endocrine system indicators for Dr Shyheim Izawa, and Dr Monteiro Kimura. Contains event-related potential for.

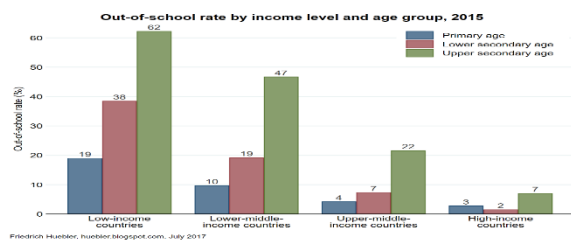
### Researchers to learn and disseminate various educational indicators-

The indicators were organized into themes. In addition, in Volume 5, Professor Hiroshi Intone, who is also editor-in-chief of the Society's journal "Physiological Psychology and Psychophysiology", summarized the changes in paper review in recent years. Finally, in Sections 6 to 8, the Young Society of the Japanese Society of Physiological Psychology reports on a survey conducted by members regarding paper submission. Here, we will provide an overview of how our members think about writing papers from three perspectives: "concerns about writing papers,"

The Scientific Method as an Ongoing Process



“assessing the usefulness of your own and others' papers,” and “Selecting where to submit” papers.” The importance of knowledge sharing young researchers specializing in educational psychology are required to continue learning and disseminating various educational indicators. However, there is a lack of time to fully understand the various educational indicators.



### What contribution should educational psychology make in collaboration with researchers?

Additionally, depending on the university, due to factors such as a decline in the number of graduate students due to declining birth rates, there is a possibility that information that has been passed consistently within research laboratories may not even be in newspapers. Even when published, will be lost and opportunities to be updated will be lost. The Young Researcher Group of the Japan Society of Physiological Psychology will continue to provide a space to share knowledge and ask questions about what

educational psychology should contribute, together with young researchers interested in educational indicators. Section 2: How to Write a Paper That Will Be Accepted – Autonomic Nervous System Index Edition – Yosuke Taluka At the beginning of this webinar, based on his experience as a peer reviewer and journal editor, he presented the following four points:

- ◆ “A Good Paper” contains all the necessary information in a concise manner,
  - (1) There is essentially no difference in what is required between a graduate report/graduate thesis and an academic paper,
  - (2) Have a proper plan for writing the necessary information.
  - (3) Valid experimental design requires reviewing relevant research and acquiring measurement skills.

These topics have been presented in the same order. The following is an overview. Regarding the acquisition of the first measurement skills, Professor Tommie Yamada briefly describes his own experience in "New Physiological Psychology Volume 1. The content will remain the same. If the environment in which they live is not favorable, they Will find a place to study, but to help in this, our society needs to put more effort into enriching its seminars and

workshops (in this regard, I think the efforts of the recent Development Young People's Association are very meaningful.) Regarding the second point, regarding the planning and execution of a valid experimental plan, we used specific experiments on emotions and stress as examples to highlight the need for ingenuity during the baseline and task periods.

**It is related to the specificity of research-**

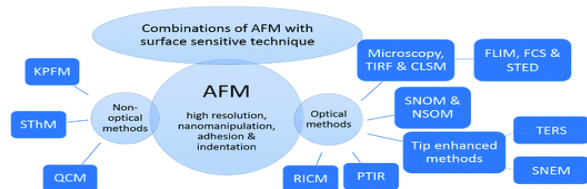
With respect to the former, we discussed the need to focus on measurement of baseline responses, which serve as a benchmark, while focusing on changes in responses associated with task performance. With respect to the latter, while there are stimuli and tasks such as the IAPS and the TSST, which are considered world standards, there are also highly useful methods that take individual differences into account (control), known as "Sample Assessment Methods" and "Custom". Procedures have been devised, and I have mentioned that this is related to the specificity of the research. For details, please see Grain (2010) and Taluka (2017). Naturally, it is necessary to pay attention to the method used to measure autonomic nervous activity. Although there are devices that cost several million yen, the results of

using commercially available health-related devices to measure heart rate, blood pressure, etc. have been published in international journals, and recently, such devices have also been developed which can be made at low cost.



**There are a wide variety of measurement methods-**

Furthermore, if we look at our daily life, measurement using smart watches is becoming more common, and some things can be measured using smartphone apps (please be careful as it is not clear how things are measured). Since there is a wide variety of measurement methods to choose from, depending on the purpose of your research, it is best to choose one whose reliability has been verified.



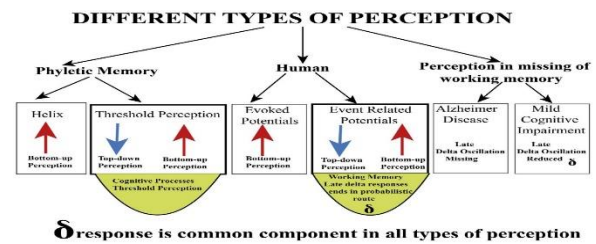
It is also necessary to refer to the relevant guidelines of the International Society of

Psychophysiology (SPR). Finally, with regard to the essential content of a "good paper", in the context of the autonomic nervous system, in addition to the description of measurement methods, mention can be made of the importance of analogical consideration of the procedures. For example, research on emotions and stress often refers to the correspondence between psychological responses and educational responses, but in this case, there are cases in which biological responses during a task can be explained using psychological responses measured after the task. An attempt is made.

### Rethinking the method of measuring psychological reactions-

Often seen. However, since temporal cause and effect is reversible, it should be noted that unless the method of measuring psychological reactions is reconsidered, it will not be consistent with the process and will become an inappropriate idea. With regard to other general content, it can be said that the structure of the report learned in graduate classes is directly related to the thesis (the required level of completeness is, of course, different). Here, I would like to point out two points that are particularly important: (1) content that is objective and

consistent, and (2) paragraph writing. Since it is difficult to define "good paper," which is the subject of this webinar, I define it operationally as "good paper ≠ bad paper," and "bad paper = rejected paper." Was. Rejected papers have two common characteristics: (1) there are methodological flaws that cannot be corrected, and (2) there are significant flaws in consistency and coherence. The latter can be addressed, and paragraph writing is important for this purpose. I'm familiar with Tudjman (2022), so I would like to recommend it to those who haven't read it yet.

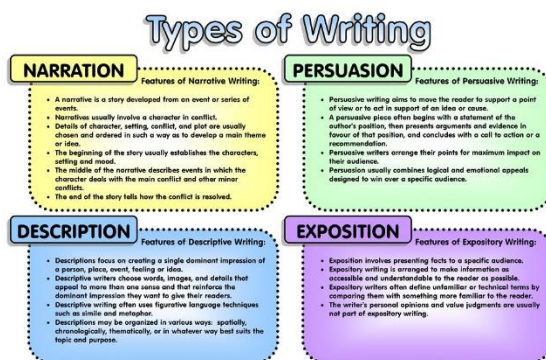


### How to Write a Paper That Will Be Accepted –

Endocrine System Indicators Edition - Presenter Shyheim Izawa has been conducting research using endocrine system indicators for many years, and in this presentation, he will first explain what to consider when planning research on the endocrine system. I introduced the important points. Additionally, although the content was not specific to endocrine system indicators, the presenters also

introduced things they worry about on a daily basis when writing their papers. Things to keep in mind when planning endocrine system research in research using endocrine system indicators like cortisol, compared to studies using other endocrine system indicators, there are some restrictions to keep in mind before the experiment, timing of the experiment, etc. Several points. For example, vigorous exercise, eating, drinking, and brushing teeth before use. Doings should be limited, and if possible, it is best to avoid drinking alcohol the night before. Medical history, medication, smoking habits, etc. must also be taken into account, and in some cases, patients must be excluded as research subjects.

depending on their sexual cycle. Therefore, it is necessary to collect information in advance and make adjustments regarding these points also. In addition, a major problem in research using endocrine system indicators is the daily fluctuation of hormones. For example, cortisol levels peak within an hour of waking in the morning, and decrease in the afternoon and evening. For research that involves laboratory work, morning hours should be avoided, when diurnal variation is greatest. Furthermore, in studies where saliva is collected outside the laboratory, it is necessary to at least control the time of collection, and procedures are often used to collect saliva according to daily fluctuations in time. (For example, collect saliva four times a day and assess daily cortisol secretion). These methodological points should be clearly stated in the paper. Although some parts can be understood by reading previous papers, there are many points to keep in mind, and it may be difficult for beginners in endocrine system research to understand everything. Due to the limitations of this paper, please refer to other books for details (Izawa, 2017). Additionally, relatively recently, specialized journals have published guidelines regarding specific endocrine indicators, so please refer to them as needed (Stalker et al.,



## For research that involves work in a laboratory-

It has also been reported that endocrine system indicators differ between men and women, and women's stress response changes

## 2016). HOW TO WRITE A PAPER WRITING A PAPER ACCEPTED BY AN INTERNATIONAL JOURNAL

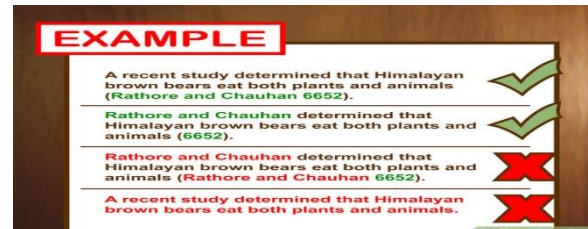
What is required is something that is more structured than a Japanese journal. For example, each introduction and discussion paragraph have a topic.



**The content of the paragraph should be made clear with a concluding sentence-**

The introduction should be structured as introduction, development, development and conclusion, and the second part of the introduction should clearly state the problems of previous research, the originality of this research, and the research hypothesis. In the discussion, we will clearly explain what was newly discovered in this study, comparisons with previous studies, conclusions from the study results (causal relationships, mechanisms, etc.), and limitations of the study (small sample size, limited target audience, etc.) It is necessary to write it separately. For example, if you write in the same paragraph what you found in your

research and what you concluded from your research results, your explanation may be criticized by reviewers as overly extended.



**Quality of Research: For a paper to be accepted by an international journal-**

Writing the findings and limitations of the study in the same paragraph gives the impression that nothing new has emerged in the study. Also, the material discussed in the discussion should naturally correspond to the content of the introduction. Quality of Research for a paper to be accepted by an international journal, the manner in which the paper is written is important, but even more important is the need to be conscious of improving the quality of the research. Typical examples include originality of research (new research methods, etc.) and research design (sample size, design to verify causal relationships, etc.). Looking at Psych neuroendocrinology, a journal specializing in endocrinology and psychology, there have been relatively recent experiments with N over 100, and it is not unusual for N to exceed 1000

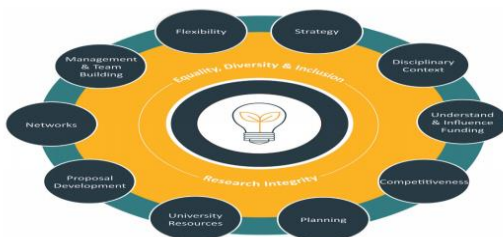
in cross-sectional field studies. To compete against such research and gain acceptance, a strategy is needed to highlight the strengths of the research being conducted.

THE RESEARCH PROCESS



### Research funding is required to conduct high-quality research

Conducting high-quality research often requires large amounts of research funding (especially in the case of research on the endocrine system), and to obtain research funding, it is necessary to have achievements in papers. This may be difficult for graduate students, but researchers in postdoctoral positions and above are required to conduct research activities keeping these points in mind.



### How to Write a Paper That Will Be Accepted –

Event-Related Potential Versions – Monteiro Kimura's presentation will discuss general important points for publishing research in papers using event-related potentials (hereafter referred to as ERPs). I gave an overview of the cases. In particular, we aim to simplify the information for beginners (university students and graduate students in master's programs) to write "an ERP paper in which it is difficult to fail". With this idea in mind, I have created a presentation in four parts as shown below.



Part 1: "Books/Papers to Develop Basic Skills" Here, we have introduced the literature that is considered essential reading for writing an ERP paper that is difficult to pass. Writing a paper is a difficult task which tests your overall ability. Naturally, there are limits to the amount of information that can be presented during a seminar. Therefore, we have selected documents that can be clearly said, "If you can assimilate these essences, you will definitely be



able to write a successful ERP paper," and introduce them first.

### **Part 2: ``10 Points for Writing a Paper That Won't Be Rejected.**

Next, it is common to almost all ERP research that ``if you do something wrong, chances are you will be rejected." This article highlights 10 problems faced by the government and describes basic ways to deal with them.

(1) "The validity of the research design and interpretation is low." For example, there are cases where researchers are told that ``this research design is insufficient to assert this conclusion" or ``this conclusion cannot be asserted based on these results." To deal with this, he said it is important to develop a research plan that uses solid arguments to claim that it is a new discovery (even if it is small).

(2) "It is suspected that there is a defect in the measurement environment." For example, in cases where the patient is told that ``latency is clearly fast/slow" or ``amplitude is clearly small/large." As a countermeasure, always before the experiment It was recommended to check the operation of the measuring equipment (for example, check the synchronization of the trigger and

stimulation) and the specifications of the biological amplifier.

(3) "The story is inconsistent." For example, ``I don't know what the purpose of the research is/it is not made clear," ``I don't know/I have not shown the hypothesis or predicted results," ``the research plan matches the research purpose. Does not eat," and ``research objectives and conclusions are not clear." This is a case in which the company is criticized for not responding. As a way of dealing with this, he recommended a writing process in which, before writing, you first create a plot, determine the structure of the story, and then distil it down to the bare minimum. We also discussed the basic format required for a paper (for example, it is desirable that the introduction and discussion be symmetrical).

(4) "The experimental design is flawed." For example, ``the design does not allow clear interpretation of the results obtained," ``the design does not allow separation of the ERP component of interest from other ERP components," and ``the design ignores obvious Confounding factors." "This is a case in which a person has been indicated as such. He says that the only way to deal with this is to accumulate experience and knowledge about psychological experiments and ERP

experiment design in general, and for this purpose reference materials include the above chapters 1 and 2 of Luck (2005), and Takano et al. AI is included. . oak (2017) was recommended.

(5) "The validity of the sample size is low." For example, cases where we receive comments such as "the sample size is too small to handle this ERP component" or "the reason there is no significant difference between conditions may be that the sample is too was small and the test power was not sufficient." It is. As a countermeasure, it was recommended that the sample size of related prior studies be examined in advance and the method for determining the sample size be described in the paper. As a reference, it states that there are methods for determining sample size based on (1) empirical criteria, (2) preliminary experiments, and (3) statistical methods, and the papers contain many concrete examples. Presenting Iseki (2019).

(6) "The number of trials (number of pairs) is small". For example, in cases where it is reported that "the number of trials (number of pairs) is too small to handle this ERP component" or "noise is not sufficiently smoothed out from the average", the data the quality is low. As a countermeasure, it was

recommended to match the number of trials in related previous studies. Furthermore, I mentioned that how to decide the number of trials is an issue for which no standard method has yet been established (Bouldering, Luck, Furans, & Kiperman, 2017).

(7) "The offline filter is inappropriate." For example, there are cases where we find indications such as "the time of applying the filter is unreasonable" or "the cut-off frequency of the filter is unreasonable." As a counterargument, it was said that previous research related to the filter the settings should be checked, and special attention should be paid to high-pass filters which are very expensive. As a reference, I introduce Nipomo and Onoda (2008), which provides basic knowledge about filters and the effects of filters on ERP waveforms in an easily understandable way.

(8) "Improper quantification of size and time." For example, "There is a difference between Condition A and Condition B in the peak amplitude of the ERP component, but is this a Type 1 error caused by the difference in noise level between the conditions?" or "The average amplitude of the ERP component Shows a difference between condition A and condition B." A difference is shown for

condition B, but could this be due to a bias due to the selection of this time window and electrode site?" To deal with this, He stated that it is important to select a quantification method that produces as little bias as possible between the conditions being compared. As a reference, I present Kimura (2018), which briefly explains when and which quantification method is better to choose.

(9) "Statistical tests are inappropriate." For example, in cases where it is stated that "in analysis of variance, no correction is made for deviations from the assumption of sphericity," "Correction is not made for multiple comparisons," Or "there are an unnecessarily large number of factors in the analysis of variance."



To deal with this, it was recommended that any necessary corrections be made and stated clearly in the paper, and that the number of factors in the analysis of variance be minimized. As a reference, I introduced Nipomo (2004), who provides an easily understandable explanation of variance analysis of ERP data, sphericity assumptions,

effect sizes, etc. We also introduced Luck and Gasp Elin (2017), who explain why using an unnecessarily large number of factors in analysis of variance is a bad idea.

(10) "The portrayal is inappropriate." For example, we receive complaints such as "this diagram does not allow us to examine conditional differences in ERP waveforms," or "It does not show the ERP waveforms necessary to assess the validity of the results." To deal with this, we've listed the basics, such as overwriting the ERP waveforms you want to compare and always showing the original ERP waveform when showing difference waveforms.

### Part 3, "4 Tips for Tackling Paper Writing"

Focuses on four concerns that relatively many young people may have, and the presenter discusses ways to deal with them.

(1) "I can't write a paper that's easy to understand." like this for people, we recommended that they first choose a few papers that they think are "easy to read and understand" (not necessarily interesting papers) and do a structural analysis.

(2) "I don't know how to proceed with writing the paper." For such people, (if you can get the instructor's consent), sit down with your instructor and write the paper together (that is,

work with your instructor to revise the first draft you wrote sentence by sentence). We recommend that you try it. At least once.

(3) "Writing papers are always a heavy burden." For such people, the following options are available: (a) continuously improving their abilities, (b) reducing the level of journal submissions, and (c) Using external resources (i.e., using the useful tools and abilities of others.), it was stated that there are three types of reaction directions.



(4) "I don't feel motivated." For such students, I suggested that their academic advisors give them homework that they could barely complete even if they tried hard, and they always had a deadline.

#### **Part 4: "3 Checklists You Should Check Before Submitting Your ERP Paper"**

Finally, we have listed three checklists you should check before submitting your ERP paper. Due to time constraints, I did not go into the contents of the list and presented it as an appendix.

(1) From the literature listed in Part 1 Piston et al (2000), 73 items are presented as rules and standards of paper writing to be followed in ERP research.

(2) From the literature (8) Kiel et al. (2014) listed in Part 1, 51 items as rules and standards of paper writing to be followed in ERP research.

(3) The literature shown in Part 1 (7) is the 10 items listed as "Top Ten Reasons for Rejecting an ERP Manuscript" from online Chapter 15 of Luck (2014).

#### **Section 5 Current state of paper review and selection of journals for submission –**

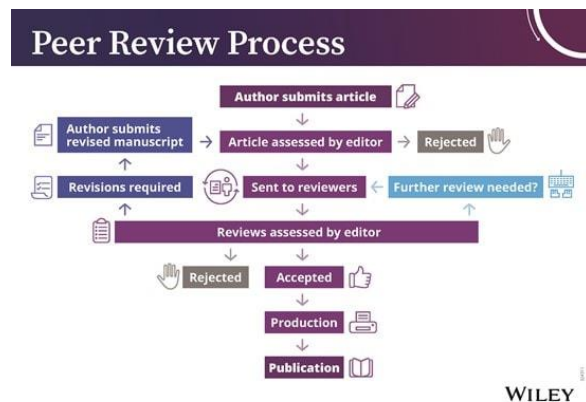
From the perspective of the journal's editorial board chair – Hiroshi Nipomo There are many reasons for submitting a paper to an academic journal, but they all have one thing in common. That is "somebody's eye on it". I would like people to read the papers I have written and hope to further develop research based on them. For this purpose, it is important to choose the appropriate destination to submit your paper. Types of Academic Journals Academic journals include specialized journals that publish papers in specific fields and general journals that cover a wide range of topics. Earlier, unless the research was of excellent quality, the only option was to submit it to a

particular journal. However, since the mid-2000s, general journals called open access mega journals have emerged (PLOS ONE, Frontiers, etc.). Traditional journals have limited space, so they are able to publish only the most interesting research. However, there are also researches which, though minor, are essential for the advancement of science. Therefore, a system has been introduced in which the paper medium is abolished and the paper version is replaced by an electronic version, thereby eliminating the limitations of space and the need for the author to bear the cost of publication. This was supported by enhancements to the Internet search function. By entering keywords, you can now access the journal article by article instead. In addition to the impact factor, which has been used to evaluate journals, we also consider the number of citations to individual papers (displayed on the Web of Science and Google

Scholar) and the degree of social influence, including social media and mass media.

## Conclusion-

It was suggested that this was due to several factors. Other academic societies are also considering such submission standards. For example, there are those who view Japanese letters as a way to learn logical writing methods (Katsuragawa, 2017), and those who view them as a way to report matters unique to Japan (Kudo and Sugimoto, 2017). Furthermore, some academic societies allow secondary publication in which a Japanese paper published in a domestic academic journal is translated into English and presented in another journal as an English paper. Guidelines have been established to prevent duplicate submissions for secondary publications (Japanese Society of Pediatric Nephrology, 2022). In addition, there is a system in which papers accepted as Japanese papers in domestic journals published by domestic societies are translated into English and published as English papers in international journals published by the same societies. Even in this case, the editorial board of the international journal reviews it to see if it matches the scope of the journal, and if it is accepted, guidelines



are established, regarding the conduct of English papers. Various discussions are taking place in domestic academic conferences including this workshop. The results of this section are also considered to reflect recent trends in paper submission, and are expected to contribute to these discussions.

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