

Developing Ethical Thinking to the Digital Era in Introductory Accounting

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This paper examines the reactions of students in introductory accounting in Japan to fraud cases to provide clues for implementing accounting education that fosters ethical thinking. To verify this, a text-mining analysis of descriptive responses to the questionnaire surveys was conducted. This survey gave students to choose the case that made the biggest impression on them from among the five fraud cases they had studied and provide the reasons for their choice. We found that students tend to view the use of accounting information subjectively and to be exposed to accounting information after first having acquired some degree of basic knowledge, which helps to foster ethical thinking. The findings can help develop these skills of ethical thinking and conducts in higher education, as information use skills, including information morality, are being promoted in elementary and secondary education in Japan. A questionnaire survey implicated the significance of incorporating ethics-related case studies in introductory accounting. One finding proposes that providing opportunities for students in introductory accounting to conduct accounting information appropriately contributes to developing ethical thinking and then to preventing fraud. This study is also expected to contribute to the development of human resources that will contribute to governance practices in the future.

Keywords: ethical thinking, information ethics, text mining, fraud prevention, introductory accounting education, accounting information, governance

Introduction

Education in Japan up to university requires students to acquire an understanding of information ethics. In the digital era, where people are exposed to a variety of information, it is worth devoting attention to how morality is practiced in people's daily lives. However, prior researches pointed out the lack of adequate ethics education integrated into the accounting curriculum has been identified as a factor in past corporate failures due to accounting scandals (Earley & Kelly, 2004; Madison & Schmidt, 2006). It means accounting education in universities tends to focus on the preparation and use of accounting information, and education on accounting ethics as a person who handles accounting information is not well incorporated. Earley and Kelly (2004) suggested providing accounting students with the ability to reason effectively with respect to moral dilemmas may help to minimize future judgment errors in accounting and auditing settings. In addition, Martinov-Bennie

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and Mladenovic (2015) pointed that the integrated ethics component into accounting education expose students to the many different cases within a variety of business contexts within which ethical issues can arise. This exposure increases their ethical sensitivity and students become sensitive to the various ethical dimensions of many business issues.

In Japan, education aimed at fostering “accounting literacy” and “skill of information utilization” based on the new course of study began in junior high and high schools from the 2021 school year. In the digital age, there is a need for highly skilled information professionals who can utilize digital technologies such as IoT (Intelligence of Things), next-generation computing, and AI (artificial intelligence) to create new value from accumulated big data and bring innovation to industries and businesses (Ministry of Economy, Trade and Industry, 2020; Ministry of Education, Culture, Sports, Science and Technology, Japan, 2018). This ability to utilize digital information is also indispensable for properly handling, analyzing, and evaluating information obtained through financial statements that visualize a company’s business circumstances.

In a meanwhile, it is apparent that the ability to obtain information from appropriate sources, to judge the reliability of information after checking the sources, and to use information in accordance with information morals and ethics is not always in place. While more and more people across generations are becoming accustomed to handling information via smartphones and other information devices, the problem of fake news and disinformation on the Internet, for example, is becoming more and more apparent. According to an international comparative survey (2022), Japan has the lowest level of awareness of fact checking (i.e., verifying the truth or falsity of information) compared to other countries, clearly indicating that fact checking and its recognition are not widespread (Ministry of Internal Affairs and Communications, Japan, 2023).¹ How can accounting education make a contribution now and in the future to produce workers who can respond to changes in the business environment brought about by the progress of the digital society? Accounting education has reached a turning point in terms of digitalization, at least in terms of helping learners develop the ability to use accounting information appropriately.

Therefore, this paper explores to find out what kind of accounting ethics education is effective for students to acquire ethical thinking as a person who handles accounting information in the course of studying accounting at university. Specifically, accounting lectures for beginner accounting students were taught with the aim of fostering ethical thinking, and text mining of questionnaire surveys was conducted to identify students’ responses to fraud cases that left an impression on them. The students’ perceptions of the cases they highlighted were then systematically organized.

This paper starts by clarifying the background of the study based on the current status of fraud and accounting ethics education, and then shows the research topic through a discussion of previous research. Next, an overview of the survey is provided, outlining the characteristics of the participants and the results of the questionnaire survey. Subsequently, text mining was conducted on the descriptive responses to the questionnaire surveys, examining how knowledge of fraud cases that left an impression on them may lead to the development of ethical thinking among undergraduate students, and presenting future issues to be addressed.

¹ We referred to the following, which is an international comparison of Japan and other countries (the United States, the United Kingdom, France, Germany, and South Korea) in terms of contact with false or misleading information (a term that includes disinformation and fake news).

Background and Research Topic

Definition and Occurrence of Fraud

The “Occupational Fraud 2024: A Report to the Nations” by the Association of Certified Fraud Examiners (ACFE) indicates that there are three main categories of professional fraud: misappropriation of assets, corruption, and financial statement fraud. It has been pointed out that financial statement fraud does not necessarily have a set definition, and each researcher or practitioner often defines it for their own purposes (Oshiro, 2014). As examples, ACFE (2024) defines financial statement fraud as “a scheme in which an employee intentionally causes a misstatement or omission of material information in the organization’s financial reports”; Kranacher and Riley (2023, p. 6) define “the intentional misrepresentation of financial or nonfinancial information to mislead others who are relying on it to make economic decisions”. These definitions include window dressing to record profits against GAAP (Generally Accepted Accounting Principles), but depending on perspective, misappropriation of assets by company associates can also be defined as financial statement fraud in the broad sense, since it can be linked to “misstatement of financial statements” (Oshiro, 2014).

Japanese Institute of Certified Public Accountants (JICPA) Auditing Standards Committee (2006) puts fraud divided into fraudulent financial reporting (called window dressing) and misappropriation of assets. The International Auditing and Assurance Standards Board (IAASB) (2022) clarifies the distinction between fraud and error of financial statements, which is based on intent or not. Fraud, such as window dressing and misappropriation of assets, is legally considered a crime, and measures are taken to combat it, including the introduction of an internal control system for listed companies since 2008. However, according to KPMG Japan’s “Fraud Survey” (September 2022), which surveyed fraud in Japanese listed companies from FY 2019 to FY 2022, 24% of the companies surveyed reported that fraud occurred in one of their corporate groups (parent company, domestic subsidiary, or overseas subsidiary) during the survey period, indicating that fraud occurred in one in four companies. This is reportedly a decrease compared to the 2018 survey, but this is attributed to the fact that fraud was less likely to be detected due to the coronavirus pandemic. Therefore, fraud continues to occur at listed companies. The most common type of fraud was the embezzlement or misappropriation of money or goods, followed by window dressing. However, the report notes that window dressing is associated with larger losses. While many of the causes of fraud are due to business operations that rely on individual competence and lack of or inadequate codes of conduct, other causes include an organizational culture that makes it difficult to express opinions to superiors and colleagues and a decline in loyalty to the company.

When companies are faced with fraud, many problems arise. According to ACFE (2024) which investigated fraud in private and public companies, government agencies, and non-profit organizations in 138 different countries and regions, only 13% of the respondents reported a full recovery the funds and assets lost to fraud, and most have not been able to fully recover any fraud losses. Concerns about fear of bad publicity were also cited as one of the reasons why a victim organization does not report to law enforcement. Therefore, the impact of fraud on a company is significant, and building an environment where fraud is less likely to occur will contribute to the company’s future development. One way to achieve this is to develop human resources with ethical thinking.

As for fraud at SMEs (Small and Medium-sized Enterprises), although the number of occurrences is not clear, SMEs do not always have the same internal control systems as listed companies, nor do they always have accounting audits conducted by accounting auditors. Therefore, the environment allows for window dressing

more easily than at listed companies, and in some cases window dressing is revealed only after the company goes bankrupt. According to the report, more than half of the cases of fraud were discovered through employee reporting. Given this context, the first step in preventing fraud is for everyone involved in the company to develop ethical thinking, not only when handling accounting information. To this end, it is worth considering an approach starting with accounting education at universities.

Accounting Ethics Education

In this context, in the accounting profession, a code of professional ethics is in place for certified public accountants (CPAs). Internationally, the International Code of Ethics for Professional Accountants is established by the International Ethics Standards Board for Accountants (IESBA), one of the four standard-setting bodies within the International Federation of Accountants (IFAC). In Japan, the code consists of two parts: the self-regulatory part based on the rules of ethics, etc. established by the Japanese Institute of Certified Public Accountants (JICPA), and the legal part based on the Certified Public Accountants Act, etc. The rules of ethics established by the JICPA are considered to be almost the same as the IESBA's Code of Ethics (Kato, 2014). According to Hatta (2016), education on these ethical rules is positioned as part of the system for professional ethics in Japan. In addition, the accounting profession is expected to have professional ethics both in theory and practice, and to contribute to the improvement of ethical standards. In graduate schools for professional accountancy in Japan, one of the educational goals is to study professional ethics.

Meanwhile, regarding the pre-university situation, the Ministry of Education, Culture, Sports, Science and Technology (MEXT), which is in charge of Japan's educational administration, has set "development of information utilization skills at the elementary and secondary education stage" as one of its objectives. The "Basic Plan for the Promotion of Education" approved by the Cabinet in 2023 addresses the development of information utilization skills, including information morality, in order to promote educational digital transformation (DX) and develop digital human resources. It stipulates that efforts will be made to expand the contents and provide up-to-date information to enhance education on information ethics. Thus, in the education prior to university, students are required to implement moral practices in handling information, and there is a system in place for students to learn professional ethics when they study to become accounting professionals in graduate school. In this context, there is a further need for education to acquire ethical thinking in universities, and the field of accounting needs to consider how to incorporate accounting ethics education in particular.

Prior Research and Motivation

It has been found that providing ethics education in universities has a positive effect on students' ethical thinking (Armstrong, 1993). Focusing on the extent to which ethics education is incorporated into accounting education, many countries do not provide ethics education through stand-alone lectures. For example, ethics education in the United States is often integrated into existing accounting curricula (Madison & Schmidt, 2006). Blanthorne, Kovar, and Fisher (2007) surveyed accounting faculty members in the United States about ethics education, and also found that it is important to include ethics in the curriculum, especially topics related to professional practice. In the United Kingdom, most institutions integrate ethics into the overall curriculum rather than offering an ethics course as a stand-alone course (Ghaffari, Kyriakou, & Brennan, 2008).

Ethics education is broadly integrated into the lectures, with auditing the most frequently covered area in the curriculum, followed by financial accounting, and then management accounting and corporate governance. Thus, in the United States and the United Kingdom, ethics education is generally integrated into lectures, and

corporate scandals seem to be a major factor in encouraging the development of accounting ethics education (Dellaportas, Kanapathippillai, Khan, & Leung, 2014; Ghaffari et al., 2008). In Australia, Tweedie, Dyball, Hazelton, and Wright (2013) surveyed the textbooks with the highest number of sales and found that textbooks for beginner students, on financial accounting, management accounting, and auditing all included content on ethics. These findings suggest that in various other countries, ethics education has become established to some extent in the curriculum in accounting education.

Nonetheless, some researchers have argued that current ethics education is insufficient. Tweedie et al. (2013) stated that there is a significant lack of content on ethics in introductory-level textbooks in Australia. They argued that at the introductory level, there is a need to not only raise the importance of ethics but also to provide a sufficient theoretical foundation, as it deals with the values and priorities of the accounting profession as a whole, as well as a technical introduction to accounting. However, difficulties have been identified in including ethics in existing lectures due to existing curricular adjustments and time constraints (Blanthorne et al., 2007; Harada, 2016).

Some view accounting ethics education as a lifelong education rather than something limited to university education. Harada (2016) showed that complete ethical reasoning skills are not required in undergraduate or graduate school, and that moral development should continue to be encouraged after starting work at an accounting firm or company as an accountant. As such, accounting ethics education at the undergraduate or graduate level is positioned as a preliminary step (i.e., pre-education) to this process. Watanabe (2023) described that even with laws and regulations and strict rules, fraud will still occur, and in order to stop it, ethics and moral values are required. However, since these are subjective and arbitrary, education about ethics and morality from an early age is important in order to provide a certain level of objectivity and logic. Thus, education on accounting ethics at universities must also take into account the relationship between students' perspectives before and after university entrance. This can also relate to the discussion on guidance related to information ethics, which is being enhanced by the Japanese government.

From the above, the development of ethical thinking should not be limited to learning during university life, but needs to be viewed from a long-term perspective. At the same time, it is essential to become aware of the development of ethical thinking in accounting from the early stages of university study. However, the current situation in Japan is that regular bookkeeping or accounting classes do not provide learning to make accounting decisions from an ethical perspective and to be able to make managerial decisions (Harada & Yabe, 2017).

Based on the above previous studies and research topics, there is room to consider implementing lectures that incorporate some elements of ethics in Japanese accounting education. Therefore, this paper seeks clues for more effective teaching methods by conducting lectures for beginner students aimed at implementing moral principles in handling accounting information and by analyzing the content that left an impression on students.

Research Design

Outline of the Lecture

In this research, questionnaire surveys were administered after two lectures for students studying accounting at universities. Two lectures were given on the topic of "Reliability of Information in Management", with subtopics "Part 1: Management Activities and Funds" and "Part 2: Objectives of Financial Reporting". In "Part 1: Management Activities and Funds", a company's principal activities are categorized into financing, investing, and operating activities, and are structured to help students learn about the relationship between each of these

activities, the types and roles of financial statements, and the connections among the three types of financial statements. In “Part 2: Objectives of Financial Reporting”, the lecture focuses more on the morality of handling accounting information, enabling students to understand the stakeholders involved in financial reporting and the importance of maintaining the reliability of financial reports in relation to fraud. Learning materials are also distributed in the lectures, with the aim of enabling the students attending to realize the significance of learning bookkeeping and accounting. In addition, review questions are prepared for students to answer at the end of the lectures to check their understanding of each item.

Sample Collection and Questionnaire Content

The authors gave lectures using these materials for first-year students at the two universities where the authors work. Kansai University belongs to the largest universities in Japan in terms of size (four sizes classified by the Ministry of Education, Culture, Sports, Science and Technology in terms of number of faculties), and the survey was given in the “Business and Information” for first-year students in the Faculty of Informatics. Komazawa University is the second medium-sized university of the four classifications, and the survey was given in “Bookkeeping” required for first-year students in the Faculty of Business Administration. The lectures for this research were conducted in the academic year 2020, when university lectures were conducted online due to the coronavirus pandemic. Therefore, the materials for the two lectures were delivered online, and the review questions were answered online. Questionnaires were also collected online using the classroom support systems of both universities.

In the post-learning questionnaire, students were asked to indicate their gender and academic year and to self-assess their understanding of management activities and funding cycles, the role of financial statements, and the reliability of financial reporting. Students rated their understanding on a five-point scale: 5 (understood very well), 4 (understood a little), 3 (understood), 2 (did not understand very well), and 1 (did not understand). In the review questions for the second lecture, students were presented with five cases of fraud and asked to select the one that made the biggest impression on them and describe the reasons for their choice in the questionnaire (see Appendix).

Sample Characteristics

The questionnaire surveys yielded 229 samples. Most of the samples were from the first-year students, but students in their second year or above who did not earn credits in the previous year were also included in the enrollment. Responses from the second year and above were excluded from the analysis data. This is because students in their second year and above may have attended similar lectures more than once and are likely to have had more exposure to accounting studies than first-year students. Responses that appeared to be duplicates by the same person were also excluded, as were responses that were left incomplete (including those for which no text data were available for the analysis to be discussed later), and responses that did not specify gender. Duplicate responses were judged by the exact match between the answer choice and the description. As a result, the total sample for this research was 187. The breakdown of the target sample was 116 (215 students enrolled in the class) from Kansai University and 71 (99 students enrolled in the class) from Komazawa University. By gender, 119 were male and 68 were female (Kansai University: Male 81, Female 35; Komazawa University: Male 38, Female 33).

Descriptive statistics from the questionnaire regarding their understanding of management activities and funding cycles, the role of financial statements, and the reliability of financial reporting are presented in Table 1

below. The descriptive statistics indicate that for all questions, many students recognized that they had some understanding of the lecture content of the sample materials. However, a comparison of the three items shows a slightly lower level of understanding of the role of financial statements compared to the other items.

Table 1

Descriptive Statistics on the Results of the Understanding of the Three Items

	N	Mean	Std. Deviation
Management activities and funding cycles	187	3.83	0.617
Role of financial statements	187	3.68	0.963
Reliability of financial reporting	187	3.93	1.034

In the questionnaire, students were asked to select the case that made the biggest impression on them among the five cases studied in the review questions in the second lecture (an assignment to determine whether the financial reporting of a fraud related case is in accordance with appropriate accounting standards and rules). The aggregated results are shown in Table 2. Table 2 shows that the respondents' choices were dominated by three cases, with the case that made the biggest impression being "My boss instructed me to rewrite the sales amount in the company ledger". In the next chapter, we perform a text mining analysis using text data describing the reasons for these choices and examine students' overall perceptions as a result of studying accounting with an eye toward moral development, as well as the context that influenced the choice of each response.

Table 2

Number of Responses for Cases That Made an Impression

Case contents	Number of responses
My boss instructed me to rewrite the sales amount in the company ledger.	78
In order to make sales performance look good, I recorded sales of items that had not been ordered.	18
To cover hospitalization expenses for a family member, a co-worker temporarily used cash from the company safe.	39
I found an error in the profit amount in the financial statements, but left it as is because correcting it would have resulted in a deficit.	14
Financial statements are prepared in accordance with appropriate accounting standards and rules, but are shared only internally.	43

Results and Discussion

Analysis Data

Text mining is a type of data mining that extracts useful information from text data and is used to analyze text data, including free-text responses in questionnaires. By conducting text mining, a complete picture of the data can be obtained, and further suggestions can be obtained by including external variables other than text data in the analysis.

This research analyzed the free-text data in the aforementioned sample of 187 using KH Coder 3. Beta. 03i (Higuchi, 2016). In the preprocessing, "power harassment", "business performance", "interest", and "financial reporting" in Japanese were designated as words to be extracted compulsorily because some words and phrases did not properly reflect the descriptions or were recognized as split words. In addition, "think", "feel", and "believe" were designated as words not to be included in the analysis because they are not intrinsically related to the analysis. As a result, 194 sentences were identified, with a total of 3,286 extracted words, of which 526 were words for analysis. Table 3 shows the 37 extracted words obtained from these processes in order of frequency of

occurrence.

Table 3

List of the 37 Most Frequent Words

Extracted word	Frequency	Extracted word	Frequency
Boss	28	Commit	8
Company	23	Financial statements	8
Problem	18	Remain	8
Case	15	Use	8
I/me/myself	15	Person	8
Actual	15	Crime	8
News	14	Fraud	8
Instructions	14	When/if	7
Money	13	Drama	6
Internal	12	Power harassment	6
See	11	Family	6
Hear	10	Manipulation	6
Most	9	Show	6
Impression	9	Disclosure	6
Relationship	9	Situation	6
Act	9	Correct	6
Rewrite	9	Appropriate	6
Realize	9	Order	6
Happen	8		

Co-occurrence Network

First, all samples were analyzed using a co-occurrence network to get an overall picture of students' responses to the reasons for choosing the most memorable cases. In a co-occurrence network, co-occurring words are connected by lines, and extracted words with strong connections are grouped together as a subgraph. Words with more frequent occurrences have larger circles. In this analysis, the minimum frequency of occurrence was set to the words with an occurrence frequency of six times or more, as indicated in Table 3.

The co-occurrence network for the entire samples is shown in Figure 1. Responses regarding the reasons for choosing the most memorable cases through working on the assignment produced six subgraphs in the co-occurrence network.

In the first subgraph, the words "internal" and "disclosure" co-occurred with "financial statements". The main responses were "I wondered whether financial statements should be disclosed only internally or also publicly to interested parties outside the company" and "I wondered whether it was correct to share financial statements only internally" which were seen as responses. The responses are essentially based on the review questions for the assignment, and considerations regarding the sharing of financial statements are extracted.

In the second subgraph, the words "boss" and "instructions" co-occurred with "order" and "rewrite". From the examples of responses, many words were extracted that reflect students' perceptions of their interpersonal relationship with their bosses, such as "I felt it was a difficult issue because I had no choice but to listen when my boss gave me the order", "I thought it would be difficult to respond if my boss actually pressured me to make changes", and so on. There were also some negative comments regarding the existence of bosses who give instructions for falsification and other actions, as well as expectations that this might not occur in reality.

In the third subgraph, the words “crime”, “family”, and “use” co-occurred with “company” and “money”. Sample responses included “I thought it was wrong to use company money for personal use” and “It is a crime to selfishly steal company money”, highlighting their awareness of crime. Since many of the responses expressed views on handling money, words that indicated an awareness of the use of company money were extracted.

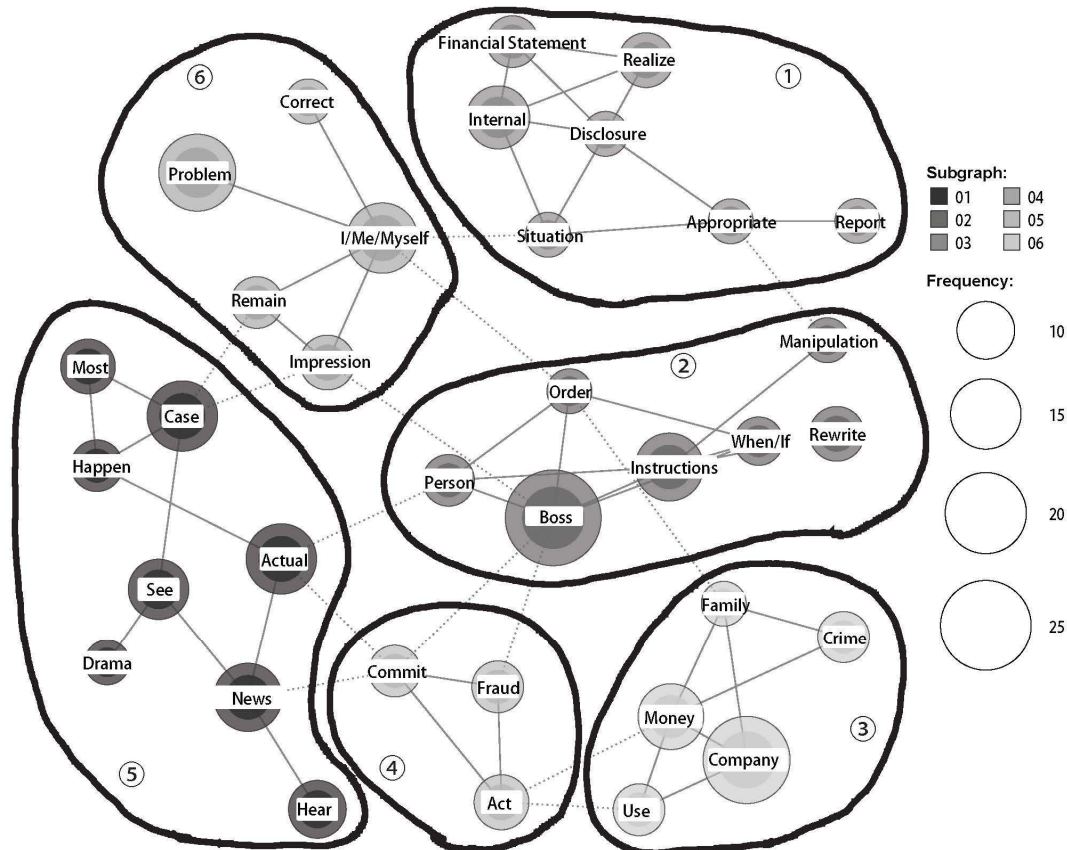


Figure 1. Co-occurrence network for the whole samples.

In the fourth subgraph, “act” and “commit” co-occurred with the word “fraud”. The words related to fraud were extracted, as in a response example, “Because it is a type of fraud that is often committed in reality”. However, some respondents wondered whether or not the case could be considered fraud when working on the assignment, commenting, “The fact that they were following the rules made it seem like it was not a case of financial statement fraud at first glance”.

The fifth subgraph has the words “see”, “happen”, and “hear” co-occurring with “news”, “actual”, and “case”. Sample responses include, “I felt that this is a common case of financial statement fraud seen in the news” and “I have seen a similar case happen in a TV drama”, indicating that participants are aware that this represents a possible real-life scenario. Those words extracted indicate that respondents perceive this assignment objectively, rather than as an event that happens to them.

The sixth subgraph co-occurs with “problem”, “impression”, and “correct” centered around “I/me/myself”. Some of the sample responses were based on the students envisioning themselves in such a situation, such as “I might encounter such a situation” and “I felt it was important to make a firm decision myself in the event that I were in such a situation in the future”. At the same time, however, there were also responses that were based on

the answers in the prior review assignment, such as “because my answer was incorrect due to my lack of knowledge”.

From the above, by working on this assignment, students perceive the cases from various perspectives. Exposure to a variety of cases in class provides an opportunity for students to imagine each case as if it were involving them in the future (after entering the workforce) and to be aware of the relevance of the crimes they see and hear about in their daily lives. Therefore, the next step should be to consider classes that will help students develop more ethical thinking. The results of the subgraph also suggest the need to accumulate knowledge. In particular, students were unsure of judging whether or not to disclose financial statements publicly and whether or not fraud had taken place, and this is something that would be difficult to learn naturally in daily life, so it is beneficial to learn about it in the course of their studies.

Correspondence Analysis by Case

Six subgraphs were extracted in the co-occurrence network. However, these characteristics do not necessarily correspond to the cases selected by the respondents. Therefore, we next used each case as a variable and conducted a correspondence analysis to determine how the extracted words differ depending on the selected case. In the correspondence analysis, as in the co-occurrence network, the minimum number of occurrences of the extracted words was set to six times or more. The results of the correspondence analysis are shown in Figure 2. The area surrounded by a square is the variable, i.e., cases presented in the questionnaire, and the further away from the origin, the more characteristic the word is considered to be.

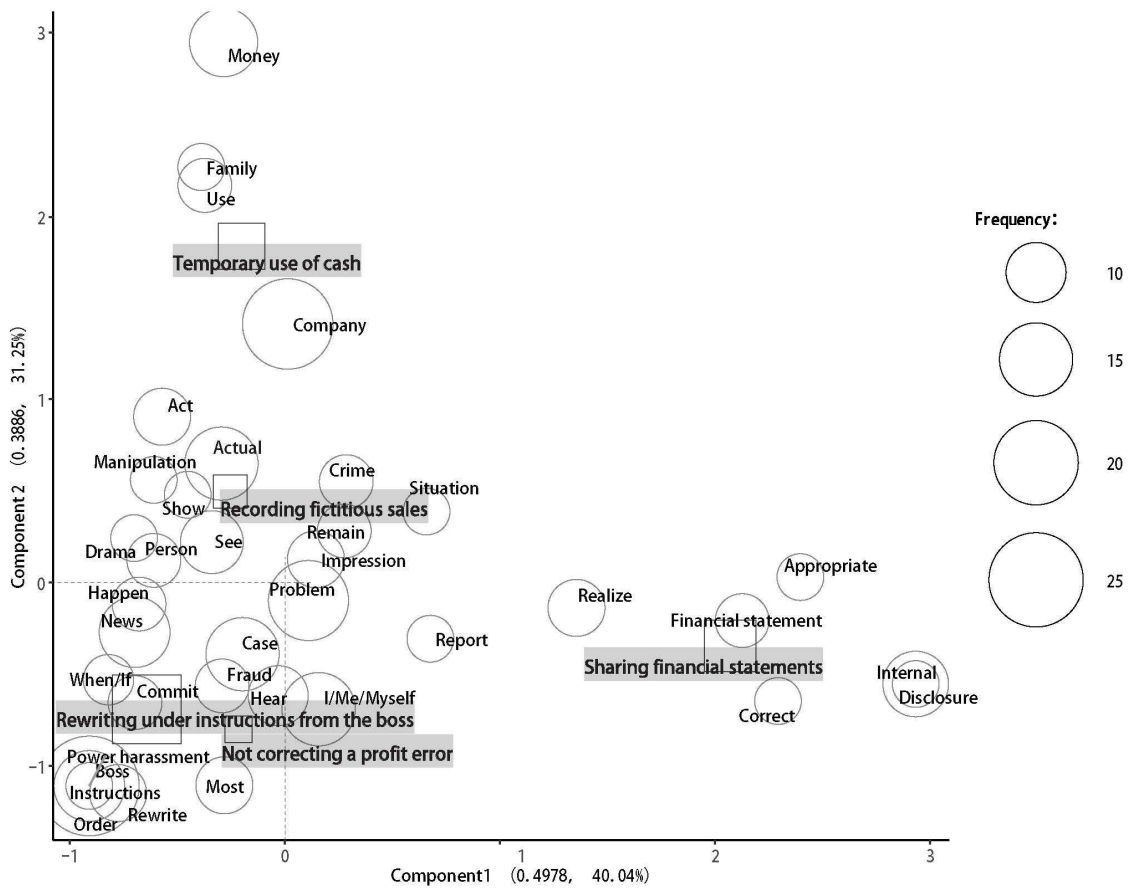


Figure 2. Correspondence analysis by case.

First, the correspondence analysis reveals that the case “Financial statements are prepared in accordance with appropriate accounting standards and rules, but are shared only internally” (sharing financial statements) is far from the other options on the X-axis and has different characteristics from them. In other words, it is a case where students have a different learning perspective. The first subgraph listed in the co-occurrence network results consists mostly of responses that chose this case and is positioned slightly apart from the other cases. This possibly indicates that survey respondents are interested in the discipline of business and perceive it as something that should be studied in accounting classes. In the case of first-year students, this result is likely since the class may be the first time they are exposed to the technical terms of financial statements.

In other cases, variation is seen on the Y-axis. We can see that there is a fairly close relationship between “My boss instructed me to rewrite the sales amount in the company ledger” (rewriting under instructions from the boss) and “I found an error in the profit amount in the financial statements, but left it as is because correcting it would have resulted in a deficit” (not correcting a profit error). Characteristic responses from this group included, “It counts as power harassment, which has become a problem recently” and “Because it is something that most people seem to do”. Extracted words such as “boss”, “order”, and “instructions” indicate that this is a case where the respondents considered others to also be responsible due to external pressure. Regarding rewriting under instructions from the boss, many respondents selected this option and were aware of the problems of interpersonal relationships within the company. This may be an opportunity to get students to think about how they should maintain relationships within the organization to prevent such cases.

The remaining two cases, “In order to make sales performance look good, I recorded sales of items that had not been ordered” (recording fictitious sales) and “To cover hospitalization expenses for a family member, a co-worker temporarily used cash from the company safe” (temporary use of cash), were based on individual judgment. Temporary use of cash is also far from the origin, with words such as “family”, “money”, and “use” being extracted. These cases involve the physical transfer of money and are the result of private circumstances. Therefore, the higher the Y-axis, the more it reflects individual judgmental behavior. These cases suggest that they provide opportunities for students to think about what they themselves should do, rather than making decisions for the organization, such as for their families or for the company.

Correspondence Analysis by Gender

Next, in order to see if there are differences in responses to this survey by gender, a correspondence analysis was conducted with gender as a variable. Figure 3 shows the results of the analysis in which the minimum number of occurrences of the extracted words was set to eight times or more.

The analysis revealed that men tended to view cases from an objective perspective, as indicated by words such as “hear”, “actual”, and “news”. Examples of such responses include: “I have actually heard this kind of news, so I thought I should be careful”, “It seems like something that would actually happen”, and “I realized that the behavior I often see in TV dramas really does exist”. Female respondents tended to focus on the actual act, using words such as “crime”, “fraud”, and “money”. Specifically, the following responses were given: “I thought I would be careful not to commit fraud if my boss asked me to do so in the future”, “I thought it was a malicious crime to take advantage of the fact that it is difficult to refuse instructions from one’s boss to improve one’s business performance”, and “I clearly realized that temporarily borrowing money, even if it is a family matter, leads to a criminal act”.

These results suggest that there may be differences in the way cases are perceived depending on gender, and that men may be more likely to remember the learning content if it is connected to information they are exposed

to in their daily lives, such as news articles. For women, in contrast, learning may be more effective if they are also taught about the consequences of fraud. Thus, it will be necessary to consider teaching to further develop ethical thinking in the future.

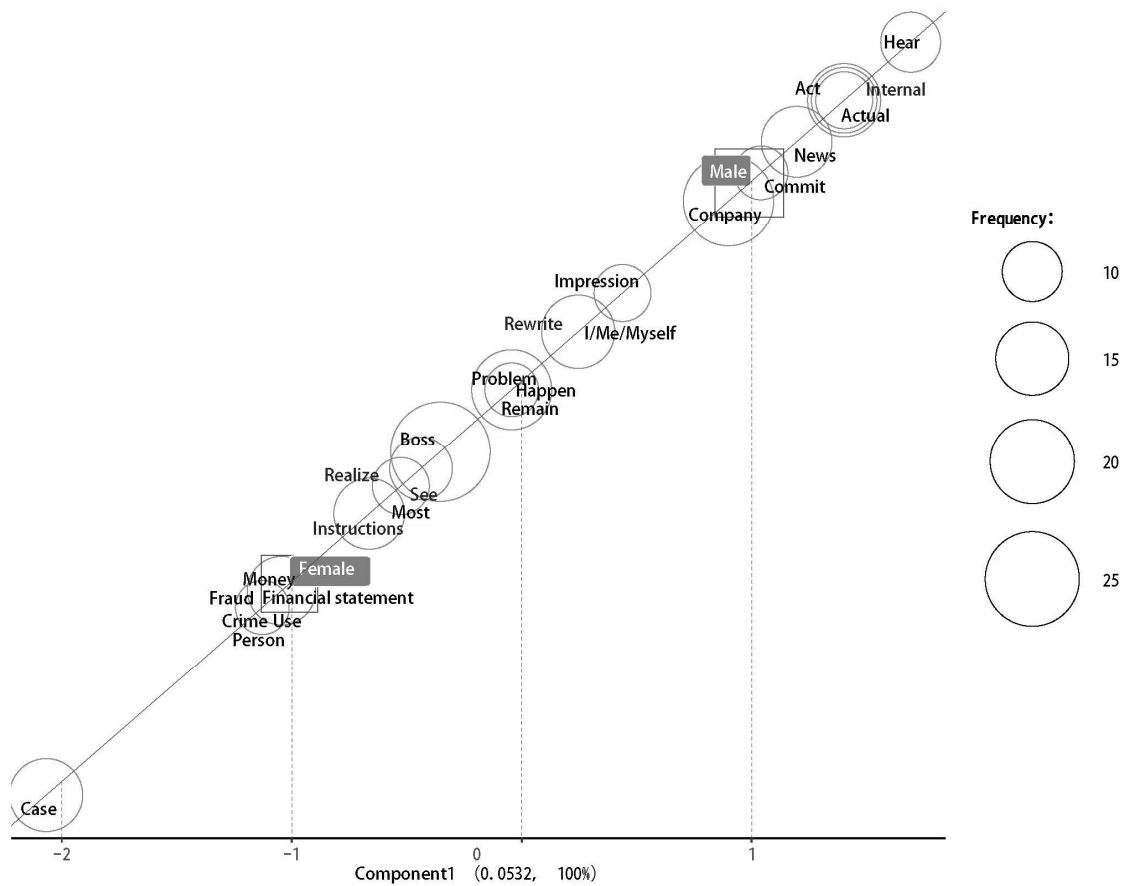


Figure 3. Correspondence analysis by gender.

Conclusion

This paper examined how accounting education can contribute to the development of ethical thinking in students, based on the recognition that accounting ethics education is important not only for the accounting profession but also for all those who will come into contact with accounting information in the future. In particular, the study focused on how to develop these skills in higher education, as information use skills, including information morality, are being promoted in elementary and secondary education in Japan. Specifically, in order to clarify the effectiveness to cultivate ethical thinking in first-year accounting education, we gave lectures incorporating ethics-related case studies and conducted questionnaire surveys after the lectures. The survey asked students to choose the case that made the biggest impression on them from among the five fraud cases they had studied and provide the reasons for their choice. Their responses were then analyzed using text mining.

Co-occurrence analysis detected six subgraphs, each with words related to the sharing of financial statements, the interpersonal relationship between themselves and their boss, the use of company money, fraud, objective viewpoints, and the viewpoints they assumed to be a party to. The results indicate that students approached the assignment of this survey from a variety of perspectives, thereby gaining an opportunity to develop their ethical

thinking. The correspondence analysis, which revealed case-specific trends, showed that students were more conscious of personal judgments or organizational judgments, depending on the case. The correspondence analysis conducted by gender showed that men tended to be more aware of objective information, while women tended to be more aware of the future (consequences) of each case.

In an additional correspondence analysis by university performed, extracted words such as “news”, “company”, and “hear” were responded to at Kansai University, while extracted words such as “crime”, “problem”, and “I/me/myself” were responded to at Komazawa University. In the case of Kansai University, the fact that most respondents are male may have affected the results. On the other hand, Komazawa University has almost the same number of male and female respondents, so many of the extracted words are the similar as those placed in the middle of the correspondence analysis by gender. The above findings indicate that, by studying cases related to fraud as well, accounting students have an opportunity to imagine their own future and to understand the reality anew through the news, etc. In other words, providing opportunities to consciously think about ethics could be the first step in advancing accounting education to implement ethical thinking.

For example, one opportunity is to have the students think about what kind of behavior is required and what the impact will be when they come into contact with cases related to ethics in an assignment, etc. It is expected that the students will act more ethically in the future when they are exposed to some other news or when they actually communicate with their bosses in the workplace. In other words, they have the potential to help build strong governance. By deepening the understanding of how ethical and unethical decisions affect various stakeholders, the ethical component can broaden students’ egocentric horizons (Mladenovic, Martinov-Bennie, & Bell, 2019). In the co-occurrence analysis, the possibility of implementing morals principles by accumulating knowledge was also highlighted. Since students’ progress through the years and learn more about the structure of financial statement disclosure and how to determine whether or not fraud has occurred, a similar survey for senior year students may yield different results than the first-year students’ perceptions.

As described above, this paper confirmed the effectiveness of incorporating accounting ethics in accounting education for students by conducting two lectures and discussed clues for fostering ethical thinking. However, there are some remaining challenges. This survey was conducted at a time when online classes were required due to the coronavirus pandemic. Therefore, it is possible that nuances that would have been conveyed in a face-to-face lecture were not conveyed correctly or that the students did not have the opportunity to discuss and deepen their understanding with their friends. It will be necessary to confirm these points again in a similar survey in the future, since the environment in which students were placed is different from that of today, when face-to-face lectures have been restored.

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Appendix: Questionnaire

Understanding check (anonymous):

The main purpose of this questionnaire is to check your understanding of learning based on the material. Your answers will not affect your individual grade in any way, so we ask for your cooperation in answering the questions. After collection, the results will be made public through lectures. In addition, we may use some of the data in our ongoing international joint research project (international activities aimed at enhancing accounting teaching materials at universities), and we will handle the data appropriately from the standpoint of protecting personal information.

Only one response is allowed.

Q1: Please select “Agree” or “Disagree” that you understand the purpose of this questionnaire and respond to it.

→ If you selected “Agree”, please proceed to Q2 and onward to answer the questions.

→ If you selected “Disagree”, please do not answer Q2 and onward and leave without answering.

Q2: Please select one of the following for gender.

1. Male
2. Female
3. Prefer not to say

Q3: Please select one of the following for your academic year.

1. 1st year
2. 2nd year
3. 3rd year
4. 4th year

Q4: Please select one answer to indicate your understanding of the “management activities and funding cycles” discussed in class 1.

*Level of understanding: 5 (understood very well), 4 (understood a little), 3 (understood), 2 (did not understand very much), 1 (did not understand)

1. Did not understand
2. Did not understand very well
3. Understood
4. Understood a little
5. Understood very well

Q5: Please select one answer to indicate your understanding of the “role of financial statements” discussed in class 1.

*Level of understanding: 5 (understood very well), 4 (understood a little), 3 (understood), 2 (did not understand very much), 1 (did not understand)

1. Did not understand
2. Did not understand very well
3. Understood
4. Understood a little
5. Understood very well

Q6: Please select one answer to indicate your understanding of “reliability of financial reporting” discussed in class 2.

*Level of understanding: 5 (understood very well), 4 (understood a little), 3 (understood), 2 (did not understand very much), 1 (did not understand)

1. Did not understand
2. Did not understand very well
3. Understood
4. Understood a little
5. Understood very well

Q7: Please select case that makes the biggest impression on you from (a) through (e) in Q3 of the assignment in class 2.

1. (a) My boss instructed me to rewrite the sales amount in the company ledger.
2. (b) In order to make sales performance look good, I recorded sales of items that had not been not ordered.
3. (c) To cover hospitalization expenses for a family member, a co-worker temporarily used cash from the company safe.
4. (d) I found an error in the profit amount in the financial statements, but left it as is because correcting it would have resulted in a deficit.
5. (e) Financial statements are prepared in accordance with appropriate accounting standards and rules, but are shared only internally.

Q8: Please briefly explain the reasons for your choice of case in Q7.