Evidence Review of Business Ethics Interventions:

What Works and Why?

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Abstract

Ethics training programs are popular in organizations and business schools. Published studies suggest that ethics interventions range from minimally to moderately effective. The current report presents the best available evidence by reviewing six meta-analyses on ethics education published between 1990 and 2019. The results show that instruction and evaluation-related characteristics play an important role in the efficacy of ethics interventions. The success of ethics training programs depends on their goals. The most effective interventions are found to be extra-curricular programs that are interactive by design. Additionally, how the program is evaluated can alter the results regarding the effectiveness of the program. Based on this review, we have made recommendations to the Canadian Centre for Advanced Leadership in Business and the Haskayne School of Business.

Introduction

Ethics development programs have gained enormous popularity in the last few decades. High profile corporate scandals such as Enron, Microsoft, Volkswagen and many more have motivated organizations to pay a special attention to ethics (Armstrong, Ketz, & Owsen, 2003; Clemente & Gabbioneta, 2017; Hail, Tahoun, & Wang, 2018). Not only businesses but also educational institutions that prepare students for employment have taken steps. For example, professional programs such as medicine (Beigy et al., 2016), nursing (Zhang, Zhao, Zeng, Xu, & Wen, 2019), psychology (Self, Wise, Beauvais, & Molinari, 2018), and engineering (Han, 2015) are pioneers in integrating ethics education into their curricula. More relevant to the Canadian Centre for Advanced Leadership in Business (CCAL), as a part of their certification process, the Association to Advance Collegiate Schools in Business (AACSB) required business schools to re-design their ethics programs to better prepare students for real-world dilemmas (Wang & Calvano, 2015).

As a response to AACSB's mandate, many business schools have launched both curricular and extra-curricular ethics training programs. For example, Litzky and MacLean (2011) estimated that about 70% of the top business schools across the world offer ethics training; however, despite the efforts to improve ethical decision-making among students, evaluation studies report mixed results regarding the efficacy of these programs. For example, Jewe (2008) observed no improvement in ethical attitudes among business students who completed a business ethics course. In contrast, Zhang et al. (2019) found that nursing students who received an inquiry-oriented ethics training had higher levels of ethical decision-making

after the intervention. These findings suggest that ethics training could be successful, but only under certain conditions.

Report Objective

The aim of this report is to review published evaluation studies on ethics training programs both in businesses and universities. By doing so, we will identify the critical factors that make or break ethics interventions. To achieve this goal, we will analyze meta-analyses conducted on this topic. The advantage of surveying meta-analysis over individual studies is that meta-analyses allow for the comparison of different studies on the same topic and detecting the average effect (Borenstein, Hedges, Higgins, & Rothstein, 2011). In this way, we anticipate to be less biased by the altered results caused by methodological factors in individual studies or the assumptions of approaches adopted by ethics training instructors (Borenstein et al., 2011).

Report Overview

This report is organized into four sections. The first section reviews the theory behind ethics education (i.e. what is taught and what outcomes are expected). The second section describes the method we used to identify the meta-analyses included in this review. The third section recapitulates the critical factors (or moderators) that alter the efficacy of ethics interventions. Finally, the fourth section will state conclusions based on the review and make recommendations to CCAL about how they can improve their ethics development programs.

Ethics Education: What does it entail? How does it work?

Content of Ethics Education

Ethics training programs vary to a significant degree in their content and design. Some universities include ethics education as a part of their curriculum (e.g., McDonald, 2004) whereas others offer stand-alone training (e.g., Ajuwon & Kass, 2008). For example, many professional programs such as dentistry offer mandatory ethics courses teaching a "Code of Ethics" pertinent to the profession (Malathi, 2015). There are also other formal courses on ethical decision-making, ethical practice, and ethical standards and procedures (Medeiros et al., 2015). Besides the formal classes, universities often also offer optional ethics-related programs to their students. These programs are generally shorter in their duration and vary in their instructional approach through case studies (Bull et al., 2011), role-plays (Noone, Sharma, Khan, Raviraj, & Shobhana, 2013), or traditional lectures (Zhang et al., 2019) with an intention to improve ethical considerations in everyday work situations (Morris & Faulk, 2012).

Expected Outcomes and Potential Mechanisms

Antes and colleagues (2009) assert that the majority of the ethical development interventions are based on Kohlberg (1984) and Rest's (1986) models of moral development. According to Kohlberg (1984), ethical development occurs in stages. Building on Kohlberg's (1984) work, Rest (1986) argues that there are four components of moral development. These are: (1) moral sensitivity, (2) moral judgment, (3) moral motivation, and (4) moral character. Moral sensitivity refers to paying attention to ethical issues (Kalshoven, Den Hartog, & De Hoogh, 2013). It is usually perceived as the first step in moral development. Moral judgement is concerned about making ethical decisions. A person with high levels of moral judgement

emphasizes ethical consideration when making decisions. Moral motivation is about willingness to act in morally right way (Schroeder, Roskies, & Nichols, 2010). People with high levels of moral motivation are committed to be morally responsible individuals. Lastly, moral character refers to thinking, feeling, and behaving in an ethical way consistently (Cohen & Morse, 2014). Moral character can be considered as the most stable form of ethical development, yet requires time to develop.

Ethics development programs generally aim at developing individuals' sense of morality using one or more of routes presented above. Building on Rest's (1986) theory, Thorne (1998) suggested that the first two components (i.e., moral sensitivity and moral judgement) can be developed on a cognitive level; therefore, they are easier to cultivate. For example, ethics interventions that aim to enhance moral sensitivity teach participants to identify a moral issue (Armstrong et al., 2003). The expected outcome of moral sensitivity interventions is the ability to recognize the presence of an ethical dilemma via augmented sensitivity (Thorne, 1998). It is assumed that participants will act ethically when they recognize the ethical issues. Programs that aim to embellish moral judgment (or moral reasoning; Armstrong et al., 2003) encourage participants to think about an ethical issue, analyze the problem, and suggest ethical ways to solve it (Antes et al., 2009). The expected outcome in this type of intervention is a higher number of ethical judgments via heightened ethical reasoning (Armstrong et al., 2003). Thorne (1998) suggests that cognitive interventions are limited in their efficacy because they only scratch the surface without changing participants' values or sense of self.

Programs that seek to enhance moral motivation and moral character are classified as "virtue interventions" (Thorne, 1998). Compared to cognitive interventions, the development of moral motivation and moral character require more effort and time. These interventions also

promise longer-term outcomes than cognitive interventions (Armstrong et al., 2003). They encourage participants to go beyond the cognitive level by encouraging them to appreciate the philosophy of ethics (Penn, 1990) and to integrate ethics into their values and sense of self implicitly (Antes et al., 2009). Because of implementation difficulties, virtue interventions are less common.

Table 1: Summary of the Ethics Intervention Types

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Evidence Search Method

We conducted an extensive search to identify meta-analyses on the effectiveness of ethical development interventions. The first known meta-analysis on the topic was published in 1990 (i.e., Weber, 1990); therefore, our search covered the period between 1990 and 2019. We used the following databases that are relevant for this topic: (1) PsycInfo, (2), PsycArticles, (3) PubMed, (4) EBSCOhost, (5) Web of Science, (6) JSTOR, (7) MEDLINE, and (8) Google Scholar. The keywords we used included: “ethics training and meta-analysis”, “ethics education and meta-analysis”, “ethics interventions and meta-analysis”, “ethics programs and meta-analysis”, “ethics case studies and meta-analysis”, and “ethical development programs and meta-analysis”. Our search yielded twelve meta-analyses conducted between 1990 and 2017. Among these, only eight of these considered relevant for the purposes of this review were included (i.e. Antes et al., 2009; Medeiros et al., 2017; Opazo, Ramírez, García-Peinado, & Lorite, 2015; Todd et al., 2017; Waples, Antes, Murphy, Connelly, & Mumford, 2009; Watts et al., 2017; Weber, 1990; Winston, 2007). Opazo et al.’s (2015) paper was written in Spanish and Winston’s (2007) meta-analysis was about the characteristics of ethics education-related publications (e.g., type or

journals, samples, but not the effectiveness); thus, we excluded these two papers from the review. Last, we included the two qualitative review articles (i.e. Craft, 2013; O'Fallon & Butterfield, 2005) and a systematic review (i.e. Stolt, Leino-Kilpi, Ruokonen, Repo, & Suhonen, 2018) in our evidence review. In the next section, we will review the findings of the eight meta-analyses and three qualitative reviews published between 1990 and 2019.

Table 2: Summary of the Included Meta-Analyses

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Factors Affecting the Effectiveness of Ethics Training

As Table 2 shows, the reviews identified for this review have a wide variety of foci. For example, while Antes et al. (2009) and Watts et al. (2017) focused on ethics education provided in the sciences, Stolt et al. (2018) covered ethics interventions for healthcare professionals only. Although all these meta-analyses provide useful insights about the effectiveness of ethics training, because of their relevance to this report, we will lend greater weight to those based on business ethics instruction (i.e. Medeiros et al., 2017; Waples et al., 2009). When the results presented in one meta-analysis conflict with the findings of another, we will present the findings coming from more recent studies and meta-analyses of business ethics instruction.

General Conclusions

As Table 2 shows, the degree to which ethics interventions deliver success is minimal to moderate[1]. However, the potency of these programs varies based on their instructional and

[1] Effect sizes (Cohen's *d*) that are less than .3 are considered as minimal, between .3 and .7 are moderate, and above .7 are high.

evaluation characteristics. Instructional characteristics refer to the features of a training program such as the duration, mode (i.e. face-to-face, online, or blended), instructor, and participant characteristics. Although available resources generally determine these factors, decisions about program design are critical for its success.

Readers should note that the findings of these studies are contingent on a number of research design features. For example, the measured outcomes, whether a control group was employed or not, sample size, or whether the evaluation was conducted by the instructor or an independent party can influence the findings. Therefore, program developers should be mindful of the role of research design in assessing the results of interventions: sometimes a well-designed intervention can be reported as a failure due to poor evaluation. In the next section, we will review what these factors (or moderators) are, and how they influence the success of ethics training programs in more detail.

Program Characteristics

Training goals.

Overall, ethics training programs yielded a moderate effect size (Antes et al., 2009). Watts et al.'s (2017) meta-analysis covered 150 studies on the evaluation of ethics courses in the sciences including those of which have been analyzed in Antes et al.'s (2009) paper. About 40% of these studies aimed to enhance moral reasoning and judgment, 30% of them aimed to improve ethical awareness and knowledge, and 20% of them aimed to develop moral character (e.g., perceptions of moral self, conceptual development, ethical perceptions of others). Knowledge-based programs and programs that enhanced the ethical perception of self indicated the strongest effects. Programs targeting meta-cognitive strategies, moral reasoning, ethical awareness, and

ethical decision making also suggested moderate levels of effectiveness. Table 3 presents moderators of ethics trainings effectiveness with their reported effect sizes.

Medeiros et al. (2017) covered 83 empirical studies on the effectiveness of business ethics courses, including the 38 studies analyzed in Waples et al.'s (2009) review. Their findings showed that the only category with large effect sizes was ethical decision-making programs; programs that aimed to enhance ethical behaviours followed with a moderate effect size. They found all other training criteria (i.e. moral reasoning, ethical attitudes, ethical awareness, ethical perception of self, and moral judgement) to be minimally effective in the sciences. Medeiros and colleagues (2017) also analyzed the effectiveness of the se programs by combining them into behavioural and attitudinal categories. Behavioural programs include ethical decision-making, moral behaviours, and moral reasoning. Attitudinal programs include moral attitudes, moral awareness, moral perceptions, and judgement. While behavioural interventions were found to be moderately effective, attitudinal programs had small effect size (Medeiros et al., 2017).

Instructor and instruction characteristics.

Programs with two or more trainers and trainers with above average expertise in business ethics training showed large effect sizes (Watts et al., 2017), while professional development programs, as opposed to experimental and academic programs, showed a stronger effect (Medeiros et al., 2017). Moreover, voluntary programs as opposed to mandatory programs showed a stronger effect (Watts et al., 2017). Training programs that cover the issue of ethics broadly, as opposed to field-specific ethical issues, resulted in a weaker effect (Watts et al., 2017). Regarding the training duration, programs that are between 4-9 hours were found to be more effective when compared to shorter and longer programs (Medeiros et al., 2017).

The meta-analysis pertaining to the effectiveness of the mode of delivery yielded conditional findings. When the intervention was focused on moral processes such as increasing ethical awareness, teaching ethical strategies, or discussing the consequences of unethical behaviours and decisions, face to face programs were found to be the most effective (Todd et al., 2017). When the goal was to teach codes of conduct or ethical guidelines, online courses yielded the biggest effect sizes (Todd et al., 2017). Moreover, courses that allocated less lecture time and more practice opportunities were found to be the most potent interventions (Medeiros et al., 2017). Interventions that allowed for both individual and group activities had larger effect sizes than those that provided only individual or only group work opportunities (Medeiros et al., 2017). Programs that allow active participation were found to be more effective (Medeiros et al., 2017). Additionally, when students had frequent practice opportunities of up to one hour (but not more), the interventions produced larger effect sizes (Medeiros et al., 2017).

Lastly, Medeiros and colleagues' (2017) meta-analysis showed that case-based programs that offer multiple problem-based case study opportunities and debates had large effect sizes. When case-based instruction is employed, the length and complexity of the case study also played a role in the success of the intervention. Watts and colleagues (2017) observed that cases that are six paragraphs or more with low emotional content produced large effect sizes. Moreover, their findings displayed that moderately complex cases were more effective than low or high-complexity cases (Watts et al., 2017). Waples and colleagues (20009) found that developmental programs compared to educational or compliance training had higher effect sizes. Programs that asked participants to forecast the consequences of mismanaged ethical scenarios and required emotion-based problem solving also produced strong effects (Waples et al., 2017).

Trainee characteristics.

Not only training and trainer characteristics, but also trainee characteristics play a role in the effectiveness of ethics interventions. Ethics training was found to produce the largest effect on professional students. The effect sizes were small for undergraduate and MBA students (Medeiros et al., 2017). Female participants and participants with no previous attendance at ethics workshops also benefitted from ethics training the most (Watts et al., 2017). Last, participants in the fields of management and sales reacted to the intervention more positively than students in other fields of business such as accounting, banking, or communication (Watts et al., 2017).

Evaluation Characteristics.

The decision regarding how interventions are evaluated can also influence the outcomes of the evaluation. Waples and colleagues (2009) found that the study design yielded minimal to moderate effect sizes. Although it is a moderate effect, among the pre-post, pre-post with control, and post test only designs, the pre-post with a control group had the largest effect size followed by pre-post design. Studies with a post-test only displayed a low effect. Watt et al.'s (2017) findings are also in line with Waples et al's (2009) except that pre-post designs had slightly higher effect sizes than pre-post with control studies. Additionally, studies who employed the same person both for instruction and evaluation showed larger effects compared to studies where the instructor and researcher differed (Antes et al., 2009; Watts et al., 2017).

Table 3: Summary of the Moderators of Ethics Instruction Effectiveness

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Conclusion

This report has reviewed the meta-analyses published on the topic of ethics development interventions covering about a 40-year period. The overall findings suggest that ethics training programs can be effective in enhancing participants' ethics-related outcomes. However, their potency is very limited due to small to medium effect sizes. Despite these findings, several instructional and design-related factors were observed to improve the outcomes of ethics training. These factors can broadly be classified as instructional and evaluation-related factors. Instructional factors include features such as the goal (or the criterion) of the intervention, the method of delivery, the program duration, and the extent to which interactive activities were used or not. It is noteworthy that design-related decisions about the program are not the only parameter that affects the success of the intervention; how the effectiveness is measured (i.e. research-related parameters) also influence the results. The next section will include recommendations to CCAL in designing ethics development programs in the future based on the evidence reviewed in the previous section.

Recommendations

Following the evidence review of ethics training programs, CCAL management, research, and operations teams met to identify CCAL's ethics strategy as well as the design of the 'next generation' ethics program based on the best available evidence, organizational resources, and CCAL's priority areas.

CCAL's Vision for Ethics, Ethics Strategy, and Program Objectives

CCAL identified its ethics-related vision to make Haskayne School of Business one of the top five institutions across the English-speaking world in business ethics. In line with this vision, CCAL's ethics strategy is to (1) collaborate with world-class business ethics experts from institutions with a reputation for their work on business ethics and (2) to observe a positive change in participants' ethical outcomes (moral attitudes, moral behaviours) as a result of its ethics program.

Relying on the best available evidence presented in this review, the following recommendations were offered to accomplish CCAL's vision for ethics, ethics strategy, and ethics program objectives:

1) **Seek improvement in participants' moral attitudes and moral behaviours.** As discussed in the second section, ethics training programs tackle moral issues both at the cognitive and character levels. Although moral motivation and character development are more promising in the long-term, they require extensive efforts and resources. Alternatively, moral cognition interventions are relatively easier to implement, and they yield effective outcomes.

    In light of these findings, the ethics program offered by CCAL can aim to improve participants' moral attitudes such as moral sensitivity, as well as moral

behaviours such as moral decision-making. To understand the effectiveness of its ethics program, the research team should measure moral attitudes and moral behaviours of participants before and after the program, along with a comparison group which does not receive the intervention. The impact of the program on participants can be assessed based on whether a significant change in those outcomes, compared to those of the comparison group, has been observed as a result of the intervention.

2) **Target fourth-year business students.** Evidence suggests that in a university setting, ethics training is most effective for undergraduate and MBA students. The degree of effectiveness of the training increases as students gain more professional experience. Based on these findings, and given the structure of its degree programs, CCAL can target fourth-year business students. Fourth-year students can be promising to achieve the program objectives for two reasons. First, the majority will be in the workforce the year following the ethics program; therefore, they need ethics training more immediately than other groups of students. Second, fourth-year students already possess some professional experience to help them appreciate the content of the training.
3) **Offer debate-based programs that allow both individual and group work.** According to the evidence, ethical debates are more effective in improving moral behaviours than other instructional activities such as cases or lectures. Moreover, in-class programs where participants engage in both individual and group activities are promising. Considering all these factors, CCAL's next-generation ethics program can be based on ethical debates in which students have a chance to engage in both individual and group activities.
4) **Keep the duration of the program between four to nine hours**. Research suggests that to achieve the most positive outcomes, ethics training programs should not be less than

four hours and no more than nine hours in total. Designing its ethics training, CCAL's next-generation ethics program should stay within these time limits.

5) **Invite two instructors with high levels of skills and expertise in business ethics and business ethics training**. Meta-analyses show that ethics training promises the highest effectiveness when there are two instructors in the program. Moreover, the effectiveness of the training was reported highest when instructors have above-average skills and expertise in business ethics. Being mindful of the role of the number of instructors and the level of instructor expertise, CCAL should seek to invite two experienced instructors to design and deliver its ethics program.

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Table 1: Summary of the Ethics Intervention Types

Intervention Type	Mediator	Expected Outcome	Advantage	Disadvantage
Moral sensitivity	Increased sensitivity to moral issues	Identification of ethical dilemmas	Can be taught in short sessions	Does not necessarily lead to change in moral behavior
Moral judgment	Analytical skills specific to ethical problems	Ethical judgment	Can be taught in short sessions	Teaches the ideal behavior, but knowledge may not translate into behaviour
Moral motivation	Increased motivation to act ethically	Higher levels of ethical intentions	Can result in more stable outcomes	Requires time and effort
Moral character	Enhanced ethical character	Ethical behavior	Results in behavioural outcomes	Highly dependent on the student's personal values and motivation

Note. The table is based on Thorne's (1998) integrated model of ethical decision-making.

Table 2: Summary of the Included Meta-Analyses

Publication	Years Covered	Focus	Number of Studies	Main Finding
Weber (1990)	1981 - 1988	Ethics courses provided at universities	4	Ethics training can be effective, but effects are short-termed.
Antes et al. (2009)	Not specified	Ethics education in the sciences	26	Extra-curricular, case-based, interactive programs that are based on real-world problems are effective.
Waples et al. (2009)	Not specified	Business ethics instruction	25	Business ethics training programs are minimally effective. Older (i.e. 35+) and professional student benefit more from business ethics training. Programs teaching cognitive strategies are more effective. Workshops and seminars with short periods of instruction lead to more effective results.
Watts et al. (2017)	2000 - 2015	Ethics education in the sciences	150	Field-specific or field-general (but not mixed) in-house programs that emphasize individual-based activities and that are offered by multiple trainers with sufficient experience are effective.
Medeiros et al. (2017)	2000 - 2017	Organizational ethics training and business school courses	83	Professional, focused, workshop-based programs are effective.
Todd et al. (2017)	Not specified	Delivery method used in ethics courses	66	Face-to-face programs are effective for process-based, online programs are more effective for compliance-based, and hybrid programs are more effective for blended courses.

Notes. Medeiros et al.'s (2017) analysis includes the studies reviewed in Waples et al.'s (2009) paper. Similarly, Watts et al.'s (2017) analysis includes the studies reviewed in Antes et al.'s (2009) study.

Table 3: Summary of the Moderators of Ethics Instruction Effectiveness

Factor	Cohen's *d* Weighted	*SD*	Effect size	Source
Criterion				
Moral Behaviours	.46	.05	Medium	Medeiros et al.
Moral Attitudes	.16	.03	Small	(2017)
Trainer Characteristics				
Number of Trainers				
1	.36	.09	Medium	Watts et al. (2017)
2	.46	.07	Medium	
2+	1.07	.24	Small	
Expertise				
Below average	.35	.06	Medium	Watts et al. (2017)
Average	.66	.14	Medium	
Above Average	.87	.32	Large	
Training Characteristics				
Program Type				
Professional Development [1]	1.10	.15	Large	
Academic [1]	.35	.06	Medium	
Experimental [1]	.41	.29	Medium	
Professional Development [2]	.34	.10	Medium	Medeiros et al.
Academic [2]	.18	.04	Small	(2017)
Experimental [2]	.03	.08	Small	
Scope of Measure				
General [1]	.50	.12	Small	
Field-specific [1]	.58	.09	Large	
Balanced [1]	.36	.11	Medium	Medeiros et al.
General [2]	.22	.05	Small	(2017)
Field-specific [2]	.24	.09	Small	
Balanced [2]	.10	.06	Small	
Duration				
1-3 h [1]	.22	.16	Small	
4-9 h [1]	.80	.12	Large	
10-24 h [1]	.46	.18	Medium	
25-44 h [1]	.37	.22	Medium	Medeiros et al.
45+ h [1]	.32	.10	Medium	(2017)
1-3 h [2]	.10	.06	Small	
4-9 h [2]	.31	.08	Medium	
10-24 h [2]	.09	.08	Small	
25-44 h [2]	.13	.09	Small	
45+ h [2]	.22	.07	Small	
Activities				
Cases [1]	.48	.07	Medium	
Lecture [1]	.51	.07	Medium	

Problem-based analysis [1]	1.64	.19		
Team work [1]	.54	.09	Medium	
Web-based discussions [1]	.48	.15	Medium	
Discussions [1]	.48	.07	Medium	
Debates [1]	.74	.14	Large	
Current Events [1]	.27	.16	Small	
Self-reflection [1]	.57	.12	Medium	
Essays [1]	.50	.10	Medium	
Cases [2]	.20	.04	Small	Medeiros et al.
Lecture [2]	.22	.05	Small	(2017)
Problem-based analysis [2]	NA	NA		
Team work [2]	.23	.07	Small	
Web-based discussions [2]	.09	.07	Small	
Discussions [2]	.22	.05	Small	
Debates [2]	.10	.28	Small	
Current Events [2]	.24	.21	Small	
Self-reflection [2]	.20	.12	Small	
Essays [2]	.21	.06	Small	
Activities				
Individual [1]	.45	.07	Medium	
Group-based [1]	NA	NA		
Mixed [1]	.82	.18	Large	Medeiros et al.
Individual [2]	.15	.05	Small	(2017)
Group-based [2]	.36	.30	Medium	
Mixed [2]	.18	.30	Small	
Interactivity				
Low [1]	.35	.13	Medium	
Moderate [1]	.47	.10	Medium	
High [1]	.63	.11	Medium	Medeiros et al.
Low [2]	.03	.11	Small	(2017)
Moderate [2]	.27	.05	Small	
High [2]	.10	.06	Small	
Frequency of Practice				
Low [1]	.35	.24	Medium	
High [1]	.83	.12	Large	Medeiros et al.
Low [2]	.12	.07	Small	(2017)
High [2]	.20	.17	Small	
Practice Length				
Up to 1 hour [1]	.84	.15	Large	
More than 1 hour [1]	NA	NA		
Up to 1 hour [2]	.03	.08	Small	Medeiros et al.
More than 1 hour [2]	.29	.14	Small	(2017)
Case Characteristics				
Complexity				
Low	.52	.38	Medium	Watts et al. (2017)

Moderate	.66	.25	Medium	
High	.33	.04	Medium	
Length				
1 paragraph	.43	.11	Small	Watts et al. (2017)
2-6 paragraphs	.55	.14	Small	
6+ paragraphs	.73	.26	Small	
Emotional Content				
Low	1.03	.38	Large	Watts et al. (2017)
Moderate	.80	.25	Large	
High	.20	.04	Small	
Focus				
Developmental	1.66	.015	Large	Waples et al. (2009)
Compliance	.12	.00	Small	
Educational	.29	.19	Small	
Trainee Characteristics				
Level				
Undergraduate [1]	.37	.07	Medium	
MBA [1]	.29	.21	Medium	
Professionals [1]	1.11	.15	Large	Medeiros et al.
Mixed [1]	.27	.22	Small	(2017)
Undergraduate [2]	.17	.05	Small	
MBA [2]	.22	.13	Small	
Professionals [2]	.13	.07	Small	
Mixed [2]	.33	.21	Medium	
Major/Field				
General business[1]	.34	.07	Medium	
Accounting [1]	.48	.13	Medium	
Communication[1]	.49	.23	Medium	
Management [1]	2.29	.53	Large	
Sales [1]	1.16	.20	Large	
Information technology [1]	.65	.16	Medium	
Banking [1]	.26	.27	Small	
General business[2]	.10	.04	Small	
Accounting [2]	.24	.09	Small	
Communication[2]	.20	.13	Small	Medeiros et al.
Management [2]	NA	NA		(2017)
Sales [2]	NA	NA		
Information technology [2]	NA	NA		
Banking [2]	.34	.11	Medium	
Gender				
More than 60% male [1]	.47	.16	Medium	
Mixed [1]	.44	.13	Medium	
More than 60% female [1]	1.26	.19	Large	
More than 60% male [2]	.31	.12	Medium	
Mixed [2]	.23	.13	Small	Medeiros et al.
More than 60% female [2]	.43	.15	Medium	(2017)

Age				
18-22	.42	.14	Medium	
22+	.90	.27	Large	Medeiros et al.
18-22	.19	.11	Small	(2017)
22+	.40	.13	Medium	
Prior instruction in ethics				
No	1.13	.28	Large	Watts et al. (2017)
Yes	.46	.08	Medium	
Evaluation Characteristics				
Study Design				
Pre-post	.42	.25	Medium	
Pre-post with control	.55	.48	Medium	
Post only	.23	.00	Small	Waples et al. (2009)
Other	.03	.40	Small	
Pre-post with control	.47	.12	Medium	
Pre-post	.52	.05	Medium	Watts et al. (2017)
Post with control	.31	.08	Medium	
Participation				
Mandatory	.26	.03	Small	Watts et al. (2017)
Voluntary	.52	.09	Medium	
Author as instructor				
Yes	.61	.12	Medium	Antes et al. (2009)
No	.29	.38	Small	

Notes. Superscript 1 = Results for behavioural criteria, Superscript 2= Results for attitudinal criteria