

Chapter 10

Researching Academic Integrity: Application of Social Sciences Research Methods



Inga Gaižauskaitė and Natalija Valavičienė

Abstract To a large extent, research on academic integrity focuses on the behaviour and attitudes of academic community members. Issues of plagiarism and cheating among students, research misconduct, corruption, or contract cheating – questions that researchers raise in academic integrity contexts are often complex and could be regarded as sensitive. Furthermore, the nature of research questions in academic integrity carries risks of bias by research participants providing socially-desirable answers, reluctance to reply openly or truthfully, or fear of revealing self-incriminating information. The choice of research approach and data collection methods, research design, and research process decisions in academic integrity research, thus, requires careful consideration of how to find answers to research questions and collect reliable data but at the same time not to harm, disturb, or stress research participants. The chapter presents social sciences research methods applicable to studying academic integrity and discusses available alternatives for data collection, covering both challenges and potential solutions. Beginning from more traditional data collection approaches, such as quantitative surveys and qualitative interviewing, this chapter looks into other possibilities that could enrich academic integrity research, such as unobtrusive data collection methods and visual methods.

Keywords Survey · Interviewing · Unobtrusive research · Visual methods · Sensitive research · Academic integrity

I. Gaižauskaitė (✉)

Technische Universität Darmstadt, Darmstadt, Germany

e-mail: inga.gaizauskaite@tu-darmstadt.de

N. Valavičienė

European Humanities University, Vilnius, Lithuania

Introduction

Although fostering academic integrity, and creating a culture of it, in an education and/or research community is a laudable aim, research on academic integrity, paradoxically, often turns to the opposite of integrity. Research often focuses on breaches of integrity, malpractices, and looking into reasons, motives, or circumstances of people's involvement in such practices. Academic integrity research questions, one way or the other, encompass questions on academic dishonesty (e.g., plagiarism, contract cheating, falsification, corruption, unauthorised collaboration). This focus has specific implications for academic integrity as a research topic. It can be regarded as a *sensitive* research topic. There can be varied perspectives on what exactly constitutes sensitivity; however, commonly, sensitive research is a study that may have negative or unpleasant consequences or implications for participants (Sieber & Stanley, 1988), focuses on topics that are intimate, could discredit or incriminate (Renzetti & Lee, 1993), or, more generally, could pose a threat (such as intrusion, sanction, or political threat) to those involved in research (Lee, 1993). Sensitive research can elicit stronger (yet again, unpleasant) emotions (Lee, 1993). Academic integrity research potentially has these features, particularly when studying self-incriminating behaviours, deviations from socially- or academically-acceptable practices, conflicting feelings, and a range of other “charged” topics.

Moreover, academic integrity research is inherently bound to an institutional environment where research participants (e.g., students), individuals, or groups are targeted by research questions (e.g., classmates, student supervisors). In some cases, researchers belong to the same community. The institutional environment creates additional pressures in combination with potentially sensitive research questions. It may prevent participants' openness, cause response bias, induce fear of disclosure or sanctions, or induce worries about harm to reputation, relationships, and other factors counter to data quality (Gaižauskaitė et al., 2022). Therefore, researchers should consider these implications when selecting their research approach, method (s), and process decisions. There is no “ready-to-go” recipe for the best choice; in each study, researchers choose from available and feasible alternatives because any approach or method has advantages and limitations. Decisions depend not only on methodological requirements and guidelines but also on the competencies that a researcher or a team has, the availability of resources, pragmatic constraints, and many other circumstances of each study. This chapter focuses on data collection methods available in social sciences methodology that have been, or could be, efficiently applied in academic integrity research. We attempt to review the key strengths of selected methods, point out some of the challenges, and suggest potential solutions or innovations.

This chapter has been prepared by combining social sciences research methodology literature; a review of methods currently applied in research on academic integrity; the research experience of the authors of the chapter, and some lessons learned in other fields of research that deal with similarly sensitive, and/or complex phenomena (e.g., research on trust). The first two sections discuss question-based

and conversation-based data collection approaches well known in academic integrity research: questionnaire-based quantitative surveys and qualitative interviewing. Next, we look into other possibilities that could enrich academic integrity research but do not directly engage with research participants, focusing on unobtrusive research approaches. Finally, we turn to the potential value of combining research approaches, and methods, and using less frequently employed research techniques.

We must notify the reader that the scope of this chapter is limited and does not discuss many important elements linked to data collection methods, such as sampling or research ethics. However, we believe that our concise overview of methods will be a useful starting point both for those new to academic integrity research and those looking for solutions that enhance their current research on academic integrity.

Surveys as a Questionnaire-Based Data Collection Method

In social research, surveys are a well-established and widely used research approach distinguished by the form of data they produce (i.e., structured variable-by-case sets of data) and the method of analysis they employ (i.e., describing the characteristics of a set of cases and drawing inferences by comparing cases) (de Vaus, 2014). Although survey-type data sets can be produced using different data collection techniques (de Vaus, 2014), in this chapter we focus on questionnaire-based surveys (Fowler, 2009; Groves et al., 2009; Tourangeau et al., 2000), which have been common in academic integrity research (e.g., ICAI, n.d.). Surveys have been used to measure self-reported academic integrity behaviours, knowledge, attitudes and/or beliefs concerning a range of topics [e.g., contract cheating (Bretag et al., 2019), plagiarism (Blečić et al., 2022), institutional strategies and/or policies (Glendinning & Orim, 2022), research conduct (Salminen & Pitkänen, 2020)]; from varied target groups [e.g., students (Caldas et al., 2022), faculty (Kier & Ives, 2022), researchers (Agnoli et al., 2017; Artino et al., 2018)], and in diverse academic environments [e.g., secondary school education (Ernst & Gerth, 2021) or university education (Awdry et al., 2020; Awdry & Ives, 2022); in-class learning and/or online learning (Harton et al., 2019)] to name a few. The advantage of survey research is that structured, predominantly (semi) closed-ended questions, can be efficiently used to collect data about objective and subjective dimensions of academic integrity from (usually) large samples of individuals (respondents). Generally, each respondent answers the same pool of questions with the same pre-defined answer alternatives. This method produces a large structured data set that allows description and comparison of cases (e.g., identifying if students and faculty hold similar attitudes about plagiarism or determining if students from different study programs or with different socio-demographic characteristic also differ in their study practices). Survey data collection instruments (i.e., questionnaires) can be used repeatedly in an identical form over time and/or across space (e.g., across institutions or countries), thus it is applicable for longitudinal and comparative research. An example is the well-known

McCabe student survey (McCabe, 1992; ICAI, n.d.), which has become “the largest student survey of academic integrity in the world” (ICAI, n.d., par. 1).

Although these advantages may encourage a preference for questionnaire-based surveys in academic integrity research, one must keep in mind that producing good (i.e., reliable and valid) survey data is challenging. Survey methodology literature outlines in detail what is required to ensure survey data quality (see, for example, Fowler, 2009; Groves et al., 2009; de Vaus, 2014). Here we highlight several points that academic integrity researchers should consider when planning, implementing, and assessing the quality of survey research. First, we would like to stress the linkage between a researched phenomenon’s conceptual and empirical levels. Survey research aims at analysing – and more specifically measuring – abstract concepts that represent a phenomenon in question. Academic integrity, honesty, plagiarism, cheating, trust – these are all abstract meanings summarised into concepts for communication. The challenge is that concepts do not have a fixed meaning; in their abstract form, they cannot be observed or measured in reality (Babbie, 2007; de Vaus, 2014). Therefore, “conceptualisation and operationalisation” (Babbie, 2007, p. 121–151) or “descending the ladder of abstraction” (de Vaus, 2014, p. 41–54) are the key processes that must be implemented to develop valid and reliable survey questionnaire items to measure, for example, the frequency of “plagiarism” behaviour among a sample of students. Just a quick search reveals that there is a range of definitions and types under the label of “plagiarism” in academic integrity literature (Tauginienė et al., 2019); moreover, perceptions of prospective respondents on what they understand as “plagiarism” may also differ (Leonard et al., 2015). Therefore, the starting point is to define the meaning of the main concepts in a particular study (i.e., what does plagiarism mean in your research?). Next the researcher must translate the defined concept to the level of dimensions and indicators (Babbie, 2007; de Vaus, 2014); that is, specific, tangible manifestation of the behaviours, attitudes or characteristics that we can identify as expressions of the concept (in this example – plagiarism) in a researched reality.

Indicators with a form of measurement turn into survey questions and subsequently, a questionnaire. At the level of a questionnaire, broad, abstract, vague, theoretical, relative concepts or terms should be avoided and the presence of such concepts or terms is not a sign of a good questionnaire (de Vaus, 2014; Fowler, 2009; Groves et al., 2009; Lenzner & Menold, 2016; Tourangeau et al., 2000). Proper operationalisation prevents miscommunication between a researcher and respondents. Ideally, the meaning of the question intended by a researcher should correspond to the interpretation of that question by each respondent; otherwise, the survey question will not work or the result produced will not be meaningful or useful (Conrad & Schober, 2000, 2021; de Vaus, 2014; Lenzner & Menold, 2016; Tourangeau et al., 2000). The more space there is for different interpretations of what a survey question or words in it mean, the more equivocal the answers that researchers collect. For example, if we ask students directly about their “cheating”, quite likely we will end up with no real knowledge of what each respondent considers to be “cheating”; how much variation there is in perceptions of individual

respondents, and, most importantly, if/to what extent their perceptions correspond to what we as researchers defined as “cheating”.

Moreover, many concepts of interest in academic integrity research are “loaded”, that is, they carry negative meaning or indicate morally and/or socially unacceptable behaviour, thus discouraging openness of respondents (Krásničan et al., 2022). Therefore, abstract concepts must be translated into the neutral language of indicators, for example, if we want to measure levels of plagiarism, we should avoid using the term but instead use items of actual actions that are considered to be varied forms or levels of plagiarism. Krásničan et al. (2022, p. 33–36) illustrate these issues in research on contract cheating, demonstrating an additional linguistic challenge (i.e., translation of concepts) in cross-cultural surveys. Suppose a researcher cannot avoid abstract concepts in a questionnaire. In that case, one solution is to define the term in the questionnaire perhaps with a concrete example (de Vaus, 2014; Fowler, 2009). Other specifications are also crucial for good measurement, such as specifications of relevant timelines or circumstances (e.g., “in the last exam session that you had”; “during an online exam”).

A reliable and valid questionnaire is essential for the quality of survey data. If a questionnaire contains major flaws and mistakes it will not work as a good measurement tool (for an extensive outline of the main mistakes and suggested solutions see, for example, de Vaus, 2014; Fowler, 2009; Tourangeau et al., 2000). Thus, results obtained from a flawed questionnaire will lose their value, be hard to interpret, or will simply be misleading. In addition, implementing a questionnaire is a potential issue in academic integrity research. Keeping in mind the sensitivity of academic integrity related research topics and phenomena, researchers need to ensure the most conducive mode of administering a survey. Interviewer-mediated face-to-face surveys have long been argued to provide the best response rate and quality of response (de Vaus, 2014; Loosveldt, 2008). However, for academic integrity surveys more private modes may fit better; for example, individual self-administered surveys or online self-administered surveys. Although they also have potential risks (see, for example, de Leeuw & Hox, 2008), self-administered surveys increase privacy, thus presumably more openness and honesty of a respondent, especially when questionnaires contain sensitive information questions. Additional assurance may be needed to convince respondents that anonymity and confidentiality will be maintained. If respondents doubt the promises and assurance of researchers or the survey mode provides insufficient assurance, they will be reluctant to give genuine responses (Krásničan et al., 2022; MacDonald & Nail, 2005). It is important to acknowledge that academic integrity surveys face risks of biased or concealed answers, lower response rates or biased samples, and higher rates of unanswered questions/unfinished questionnaires (Gaižauskaitė et al., 2022; Krásničan et al., 2022). Therefore, researchers should be transparent when assessing the quality of obtained survey data and careful when interpreting and reporting survey results.

These precautions should not prevent researchers from using questionnaire-based surveys in academic integrity research but enhance their quality. However, researchers should remember that the reasons to apply the survey method are

simultaneously their limitations. In producing structured data and applying questionnaires to large samples, surveys do not allow for in-detail or in-depth responses, answer alternatives have to be limited and uniform, and questions and answer alternatives are decontextualised (de Vaus, 2014). Therefore, alternative methods should be considered if research aims at the latter properties in data.

Of course, to some extent, open-ended questions can be included in survey questionnaires and meaningfully complement the results obtained via closed-ended questions (e.g., Kier & Ives, 2022). However, open-ended responses in their logic are more qualitative, thus their processing and analysis “deviate” from the standard procedure of typically (semi) closed-ended survey questions. If a sample is quantitatively large, one must be aware of the time- and effort-consuming work that is required to analyse data obtained via open-ended responses in survey research.

Qualitative Interviewing: In-Depth Insights Into Participants’ Realities

Qualitative interviewing is used widely in academic integrity research (e.g., Devlin & Gray, 2007; Goddixsen et al., 2021). Individual interviews and focus group discussions (the two best-known forms of qualitative interviewing) are commonly applied when researchers aim to reveal detailed, contextualised, reflective perspectives and experiences of those engaged in academic integrity processes: students and staff stakeholders, such as teachers, administrators, librarians, or academic support staff (see, for example, Glendinning & Orim, 2022; Mansoor et al., 2022; Stavride & Kokkinaki, 2022). Individual interviews and focus group discussions are reflexive data collection methods, based on intensive interaction between research participants and researchers. Individual interviews rely on individual relationships between a participant and a researcher. In contrast, the focus group method by its nature – through group discussion – helps to reveal new points of view that go beyond the limits of individual experience and are created via the interaction of research participants among themselves (though with the guidance of a researcher/moderator) (Hennink et al., 2020; Krueger & Casey, 2009).

Some researchers (e.g., McCabe, 1999; Alsuwaileh et al., 2016) argue in favour of qualitative interviewing by highlighting the weaknesses of quantitative research, which may fail to capture the complexity of social phenomena and in-depth, real-life accounts of social actors. They claim that quantitative research masks much of the information needed to better understand academic integrity; it provides information about relationships but does not reveal the nature of these relationships (Alsuwaileh et al., 2016). On the contrary, during qualitative interviews research participants allow researchers to look at the situation through their eyes and words (Hennink et al., 2020.).

Qualitative interviewing is strong in its flexibility (Hennink et al., 2020). It gives the opportunity to hold a question-guided, but not rigid, conversation, to ask

additional questions, to prompt elaboration on grey zones, and to provide examples that help to grasp the subtlest nuances of the topic under consideration. An interview is primarily a time-long conversation, during which a research participant has time to think and reflect on the topic, to remember important aspects, and to tell the remembered thing at any time during the interview and in the research participants' preferred wording. Thus, a researcher can delve into a better understanding of the meaning as intended by participants.

At the same time, qualitative interview methods suffer from known risks to data reliability. Since academic integrity is a sensitive topic encompassing questions on deviant, undesirable, and/or unethical behaviour, it is necessary to create a favourable environment for interview conversations so that research participants want to talk openly and, if applicable, disclose their engagement in such behaviour or experience with conflicting circumstances. The advantage of qualitative interviewing in academic integrity research can only be achieved if research participants trust a researcher and feel comfortable revealing their stories. During an interview, it may be easier for a research participant to talk about others, but not about themselves. It may be easier to reveal their own opinions, but not always the motives of, for example, dishonest behaviour. An interviewee can project under what circumstances they would justify dishonest behaviour, but telling of their own dishonest behaviour may lead to unpleasant feelings.

Moreover, the researcher effect in qualitative interviewing, albeit unconscious – exists. When research participants publicly, even in the eyes of only one person – the interviewer – seek to appear more positively, it is unpleasant for them to discuss their own misbehaviour. Researchers acknowledge that we can never be sure that research participants actually experienced what they say they experienced (Firmin et al., 2007). Defense mechanisms may be in place to protect self-image against the anxiety experienced during research participation. Therefore, the professionalism of a researcher is required here, which would allow for establishing a rapport with research participants and create an environment of trust (Hennink et al., 2020; King & Horrocks, 2010).

Difficulties may also manifest during recruitment processes. It is always easier to recruit “good” participants, who adhere to the values and principles of academic integrity; however, the experiences of those who have breached academic integrity rules are of particular value when aiming to understand what leads to unethical behaviour. Such participants may be difficult to reach or reluctant to participate. Recruitment through self-selection, when, for example, students join the research by contacting the researcher, may result in a limited number agreeing to join, as Davis's (2022) experience shows, or the self-selected cases may not reflect the variety of experiences needed to answer a research question. Therefore, researchers encounter a difficult task in balancing the need to be proactive when motivating participants to take part in academic integrity research and putting all necessary effort to build rapport with potential research participants from the very first contact with them. General qualitative interviewing methodology literature provides numerous guidelines around the factors that can affect the success (or failure) of an interview conversation, including arranging a neutral and safe environment, the choice of

interviewer/moderator, the style of conversation, and even the appearance of interviewer/moderator (see, for example, Davies & Hughes, 2014; Flick, 2007, 2014; Hennink et al., 2020; King & Horrocks, 2010). In academic integrity research, safeguards against identification and assurance of confidentiality are particularly important (Gaižauskaitė et al., 2022).

If individual interviews provide a possibility to go deeper into each participant's case, focus groups (as a form of interviewing) allow gathering of more diverse information at once and use their strength to create an engaging environment for discussions allowing new ideas and insights to emerge that would be impossible in individual interviews (Hennink et al., 2020; Krueger & Casey, 2009). Based on communication and interaction between participants, focus groups are useful in researching participants' attitudes toward academic integrity, their values, expectations, perceptions of their role in promoting academic integrity, and their behaviours and preferences. Gullifer and Tyson (2010) conducted a focus group study to explore students' perceptions of plagiarism. They selected focus groups as the main data collection method, which placed students as experts and thus engaged them in discussion minimizing the interaction between the moderator and the individual members of the group. Horizontal interaction in the group encouraged sharing experiences and explaining views more freely. Still, face-to-face focus groups may be inappropriate for discussions where anonymity inside the discussion group is impossible. Computer-facilitated focus groups (Packalen & Rowbotham, 2022) can overcome this barrier. The combination of anonymously written entries with a conversation, used by Packalen and Rowbotham (2022), created a comfortable environment for students to provide honest opinions about their views on academic integrity, and conversation with their peers and the facilitator enabled a potentially deeper evaluation of the topic.

In addition, another important practical concern is the scheduling of focus groups. Since the focus groups require gathering all participants simultaneously and in the same place, it is important to select a proper and convenient time for all potential participants. For example, the specific time in the academic calendar may impact students' willingness or possibilities to participate in focus groups. As the experience of Richards et al. (2016) shows, due to the constraints of their project schedule, focus groups were organised when students were completing assessments, which decreased the number of eventual participants.

Individual interviews and focus group discussions allow additional tools, such as scenarios and dilemmas related to academic integrity (Packalen & Rowbotham, 2022), or they can be combined with visual techniques (see the section below), thus having the potential of producing multi-layered data. Moreover, observing the non-verbal language of research participants provides much additional material that can be priceless to a skilled researcher. However, we would like to stress that in qualitative approaches, researchers are active participants in the data collection process, therefore the qualification, preparedness to conduct interviews and even their personal qualities may result in the success or failure of the research (Hennink et al., 2020). In addition, qualitative data analysis is time and effort consuming. Individual interviews or focus group discussions may produce data corpuses of

hundreds or thousands of pages. Therefore, when choosing these methods, researchers should clearly understand the challenges of qualitative data analysis, reasonably choose the most appropriate strategy of multiple methodological possibilities, and have the skills required to conduct it.

Unobtrusive Methods for Academic Integrity Research

In contrast to surveys and qualitative interviewing, unobtrusive research methods do not rely on conversations with people, asking them questions or otherwise directly disturbing their social environment (Kellehear, 2020). Unobtrusive research systematically *observes* people's behaviours; therefore, such methods do not include questionnaires, interviews, tests, manipulative experiments, or other interfering tools. In researching academic integrity, using unobtrusive methods can provide valuable insights that will not affect participants' reactions and tensions produced by a sensitive topic. The main advantages of unobtrusive methods, therefore, are their capability to assess actual behaviour instead of self-reported behaviour, relatively easier access to data, repeatable results, no interruption to peoples' activities and time, safety due to the anonymity of the researcher, no effect by the presence of the researcher, also these methods are relatively inexpensive and good for longitudinal study designs (Kellehear, 2020). As Mastin et al. (2009) argue, measuring academic integrity and observing academic dishonesty directly is difficult, particularly in an online environment. Therefore, unobtrusive methods may be an efficient tool for discovering the complexity of academic integrity. Unobtrusive approaches allow "researchers to capture what people actually do and the actual outcome of their behaviour or actions rather than what they subjectively think they do or how they retrospectively reflect on their behaviour" (Gaižauskaitė et al., 2022, p. 55).

However, when selecting a research method, the disadvantages should also be considered. As Kellehear (2020) points out, the main issues of unobtrusive methods relate to the quality and completeness of original records, researchers' capabilities to understand the context and interpret the findings, the possibility of intangible intervening variables, selective recording of observational data, over-reliance on a single method, and limited application range. Considering the main weak points of unobtrusive methods, a researcher can minimise the weaknesses and maximise the strengths in designing an academic integrity study.

When planning to use unobtrusive methods, a researcher should think carefully about the huge amount of data produced by people's behaviour and decide what specific data may be useful and informative for the research. Students, teachers, administrative staff, parents, and other educational stakeholders – intentionally or unintentionally – all leave physical or digital traces. Even trash can be a source of information in researching academic integrity. An example is Pullen et al.'s (2000) unobtrusive study of cheating, where they analysed discarded "cheat sheets" in universities. The scope of potential information sources for unobtrusive research is

very wide and depends on a researcher's creativity as to what they will find most useful for research. Below are some suggestions that apply in academic integrity research.

One group of unobtrusive data collection methods is related to using *digital tools*, such as learning management platforms or online examinations, engaging in data mining or digital traces studies, which can be valuable tools for researching study practices and malpractices, such as cheating. Learning management platforms allow information gathering about student behaviour during online assignments. These tools are applied for examining cheating as well as the efficacy of various measures, such as appealing to student honesty or requiring them to pledge their honesty to mitigate cheating (Pleasant et al., 2022). The main feature of these learning management platforms is the possibility to gather information about students' navigation away from a test page in order to use additional resources or cheating by a student during an online exam or test.

For unobtrusive cheating research, students' online and offline grades can be compared as they were in the study by Ridley and Husband (1998). Here, students' grades were compared between online and offline delivery of the same course as potential indicators of academic cheating. However, to apply this method the researcher should be able to identify statistically significant differences between online and offline grades. Additionally, the course needs to have two delivery modes, both online and offline, to have the opportunity to compare the grades.

Teclehaimanot et al. (2018) in investigating how to ensure academic integrity in online courses, used three online testing environments for examinations over sequential semesters. The data were analysed to determine whether differences across the testing environments were statistically significant. As this was a long-term study, collecting data from more than one semester in order to be able to compare different testing environments the study did not use a control condition, which limits the ability to draw conclusions concerning differences in testing or cohorts account for their results.

Another group of unobtrusive data collection is *document analysis*. The term "document" covers documents understood as "traditional" documents or records, such as academic integrity policy documents, codes of ethics, and variety of other documented sources, for example, in the form of online forums, blogs, or newspapers. Such documents already exist; thus, a researcher can collect information at any time, especially when documents are online. Additionally, there is no need to make specific arrangements with research participants or study environment (as, for example, in the case of qualitative interviews). For example, Miron et al. (2021) examined universities' policy documents for contract cheating language to reveal the description of contract cheating in Ontario universities, to compare it to the core components of exemplary policy, and to provide insights for the revision of policy papers. To explore integrity management practices in high schools, Tauginienė and Gaižauskaitė (2019) applied qualitative content analysis of publicly available policy documents, retrieved from high schools' websites, about the management of school students' behaviour. Document analysis also may help to research students' experiences. When researching cheating, Redding (2017) applied document analysis for studying the content of editorials written by students in high school

newspapers. This method allowed the researcher to examine their discussion about ethical dilemmas and decision-making and provide an opportunity for a more nuanced explanation of high-achieving students' rationalizations to cheat. This content could have been missed if using, for example, only surveys.

In summary, unobtrusive methods are not new, but the field of researching academic integrity is still discovering these reliable and valid methods. Regardless of whether unobtrusive methods would be a single or supplementary method, they can add value in revealing additional layers of academic integrity phenomenon and providing more nuanced knowledge of its complexity.

Mixed Methods, Multiple Methods and Other Suggestions

In previous sections, we discussed separate and common social science research methods for data collection in academic integrity research. However, keeping in mind the characteristics of academic integrity topics as outlined in the Introduction, we believe that whenever possible, a combination of research approaches, methods and/or techniques would be conducive to providing well-grounded answers to academic integrity research questions. In this section, we would like to propose several ideas.

First, when feasible, *mixed-method research* combining quantitative and qualitative approaches could be a good solution to employ the advantages of both and produce more detailed and better-founded data on complex and/or sensitive topics of academic integrity. There is more than one way of designing mixed research, however, mixing methodologies (and/or methods and techniques) generally provides fuller, richer, and more comprehensive information than a single-method study design (Schoonenboom & Johnson, 2017; Wisdom & Creswell, 2013). Two main directions exist for integrating qualitative and quantitative approaches to data collection and analysis: sequential and concurrent (convergent) (Bazeley, 2018; Plano Clark & Ivankova, 2016; Wisdom & Creswell, 2013). Sequential mixing presumes that one approach is used before the other. Commonly, qualitative methods like interviews or focus groups can be used to develop a quantitative data collection instrument (questionnaire or questions) presuming increased appropriateness and quality of measures. In a reverse sequence, at the first phase, a quantitative survey can be conducted, followed by qualitative interviews and/or focus groups aimed at a more detailed interpretation of the quantitative results. The concurrent mixed method design means that qualitative and quantitative data are collected simultaneously and are used to compare and converge the results. Regardless of the direction of integration, varied combinations of qualitative and quantitative methods can be involved. However, in any case, the presumption is that neither qualitative, nor quantitative data stands alone, and precisely the combination gives the value of a more fulsome and in-depth understanding of the phenomenon researched.

An example of a mixed (sequential) design is a study on academic dishonesty among students by Alsuwaih et al. (2016) who used qualitative interviews to

generate hypotheses and construct a questionnaire-based survey, thus triangulating the data from two research approaches. Likewise, Skaar and Hammer (2013) used a survey to collect quantitative data on the frequency and extent of plagiarism among students writing essays with internet access, and later interviewed students to explore their views on internet access and plagiarism during essay writing and went deeper to the causes of plagiarism cases. Similarly, Amrane-Cooper et al. (2021) combined survey and semi-structured interviews, which were intended to investigate issues identified in the student survey. An example of a concurrent mixed method design is the study of Firmin et al. (2007), who mixed in-depth qualitative interviewing with an experiment as a simulation of cheating. A further example comes from Davis (2022), who combined qualitative interviewing with document analysis methods.

Second, a “cousin” of mixed method design is a *multiple method research*, when a study employs more than one qualitative data collection method or more than one quantitative data collection method (Schoonenboom & Johnson, 2017). The rationale to use multiple methods is similar to mixed method design: aspiration to obtain more comprehensive data by choosing best-fit combinations of methods depending on the research question, target groups, or other circumstances. The authors of this chapter, with their team, applied a multiple-method approach in a qualitative academic integrity study in an institution, using focus group discussions with students and in-depth individual interviews with faculty. We chose different methods to ensure the most acceptable environment for different target groups to open up about their academic integrity experiences, behaviour, and perceptions. Students were more comfortable talking when surrounded by “others like me”. In contrast, academics could reflect on some of the more sensitive or disturbing experiences when speaking more privately only with a researcher. The study also included document analysis, which set the background for interpreting qualitative multi-method data. Such a combination produced rich, to some extent unexpected, but informative, data on the situation of academic integrity culture at an institution.

Finally, we encourage researchers to look for innovative data collection techniques or their combinations with “traditional” methods like interviews or surveys to obtain in-depth data on academic integrity topics. Some suggestions may come from other fields of “sensitive”, complex, and elusive research topics, where researchers acknowledged the potential difficulties for research participants to discuss these topics verbally and looked for an additional or alternative type of data (e.g., de Groot et al., 2020; Muethel, 2012; Saunders, 2012). Here we would like to share insights on the potential application of visual and gamified methods for academic integrity research. To describe it concisely, *visual methods* mean that research uses visual images (such as photographs, videos, drawings, maps) to explore participants’ experiences, prompt their memories and self-expression and delve into their meaning-making (Frith et al., 2005; Glaw et al., 2017; Harper, 2002; Knowles & Sweetman, 2004). Visual methods can be used alone or can be combined with verbal methods, such as oral interviews or written narratives eliciting better understanding of experiences, easier expression of abstract concepts, and thus higher quality of data (Bagnoli, 2004, 2009; Copeland & Agosto, 2012; Harper, 2002; Juozeliūnienė, 2014; Juozeliūnienė & Kanapienienė, 2012). One of the authors of this chapter

used a technique of drawing trust maps in combination with qualitative individual interviews to better understand how research participants perceive and experience the relation of trust in their social interactions, which proved to be a very efficient combination to retrieve tangible participants' accounts on such an elusive and, to an extent, sensitive phenomenon as trust (Gaižauskaitė, 2022). An example of visual methods in academic integrity research is a study by Janczukowicz and Rees (2017) who employed a multi-layered analysis of mind maps. Aiming to understand the relationship between academic and medical professionalism among medical students, they analysed both textual (words) and visual (pictures) elements of the mind maps created by the students. Although acknowledging the difficulties of such a method, the authors firmly advocate further use of visual methods as they can produce data that more traditional methods like interviews may fail to notice (Janczukowicz & Rees, 2017).

Likewise, researchers use *gamified techniques* when dealing with complex and/or sensitive topics to get insights that could be unavailable using other or solely verbal and/or questions-based methods. Examples of gamified techniques are card sorting (e.g., Saunders, 2012), board games (e.g., Muethel, 2012), or repertory grids (e.g., Ashleigh & Meyer, 2015) often used in combination with an interview or narrative methods. To give a glimpse into the application of such techniques, a board game was used in Muethel's (2012) study to identify both universal and culturally specific understandings of trustworthiness. In the board game, Muethel (2012) used several values that were linked to trustworthiness in previous studies. First, participants were asked to rank and define each value; then, to describe how each value would reflect in someone's behaviour, and, finally, to explain the logic they used when ranking the values. Muethel (2012) concluded that the benefit of applying a board game technique manifested in the interpretive power that it elicited and helpfulness when navigating the equivocality and complexity of the phenomenon of trust. Therefore, we suggest that visual and/or gamified research techniques could be efficiently applied in academic integrity research, which often deals with equivocal, broad concepts, intuitive phenomena, controversial dimensions of behaviour, arrays of emotions and/or sensitive contexts.

However, it is a must to note that mixed or multi-method research and visual or gamified techniques also require additional effort, time and resources in preparation and implementation. The corpus of data, expectedly, will also be larger than in a simpler or single-method study. Therefore, researchers should carefully assess the feasibility of these approaches in their research.

Conclusion

When choosing a research approach and a method (or methods), exploring the advantages and disadvantages of each is a must. Additionally, it is necessary to consider the purpose of the research, the research problem, and the qualification of the researchers. As we have demonstrated, no "ideal" choice exists for an academic

integrity research approach in the social sciences. In each academic integrity study, researchers should consider the risks that their questions may place to the well-being of research participants, the obstacles that could prevent participants from being sincere, and the resources required to overcome potential challenges.

Question and conversation-based methods capture self-reported academic integrity behaviours, knowledge, attitudes and/or beliefs about a range of topics, target groups, and environments. Surveys aim to measure and produce structured data in big samples while missing much detail, whereas qualitative interviewing goes deep into subjective meanings of carefully selected cases. In both cases, however, it is important to remember that data are based on responses “filtered” through people’s subjective minds and experiences. On the one hand, it may be exactly what we are looking for; on the other hand, as we have shown, these methods are reactive and sensitive to the research environment, tools, and interactions.

Unobtrusive methods, conversely, do not interrupt the lives of individuals, and consequently are unaffected by the researcher’s presence. These methods, employing analysis of the various traces of individuals’ online and offline behaviour, are capable of assessing actual behaviour instead of self-reported behaviour and have relatively easier access to data. The main work and challenges are, however, to choose, access and consistently collect the sources of information that would be most appropriate to answer research questions.

Application of visual and gamified methods for academic integrity research is not widespread so far, however, their features may be especially useful when verbal methods are insufficient to reach the information of interest from the target group. When the research is related to broad concepts, intuitive phenomena, controversial dimensions of behaviour, the array of emotions, or sensitive contexts, visual and/or gamified methods may be applied alone or in combination with other methods.

Academic integrity, being a complex, sensitive and bias-prone phenomenon, can be studied using different research approaches and applying various data collection methods. Depending on the research aim, a single research method may be perfect to answer a research question. Nevertheless, applying more than one research approach, data collection method, or technique will enable researchers to find an additional perspective, layer, or nuance of academic integrity.

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