"It's like a double-edged sword": Mentor Perspectives on Ethics and Responsibility in a Learning Analytics–Supported Virtual Mentoring Program

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Abstract

Data-driven learning analytics (LA) exploits artificial intelligence, data-mining, and emerging technologies, rapidly expanding the collection and uses of learner data. Considerations of potential harm and ethical implications have not kept pace, raising concerns about ethical and privacy issues (Holstein & Doroudi, 2019; Prinsloo & Slade, 2018). This empirical study contributes to a growing critical conversation on fairness, equity, and responsibility of LA lending mentor voices in the context of an online mentorship program through which undergraduate students mentored secondary school students. Specifically, this study responds to a phenomenon shared by four mentors who recounted hiding from mentees that they had seen their LA data. Interviews reveal the convergent and divergent ideas of mentors regarding LA in terms of 1) affordances and constraints, 2) scope and boundaries, 3) ethical tensions and dilemmas, 4) paradoxical demands, and 5) what constitutes fairness, equity, and responsibility. The analysis integrates mentor voices with Slade and Prinsloo's (2013) principles for an ethical framework for LA, Hacking's (1982, 1986) dynamic nominalism, and Levinas's (1989) ethics of responsibility. Design recommendations derived from mentor insights are extended in a discussion of ethical relationality, troubling learners as data-subjects, and considering the possibilities of the agency, transparency, and choice in LA system design.

Notes for Practice

- Educators, such as mentors, who participate in LA practice, in this case through an online mentoring environment, hold diverse viewpoints on fairness, equity, and responsibility in LA. These viewpoints provide important insights for designing fair, equitable, and responsible LA systems.

- Tensions identified by mentors included the intersecting phenomena and dynamics surrounding self-awareness of data ethics and understandings of privacy, perceptions of trust and risk, agency, context, and culture.

- Interviews with mentors suggest that their LA use and reflection on ethical concerns was shaped by: 1) their perceptions of the affordances and constraints of LA, 2) their understanding of the scope and boundaries of LA, 3) ethical tensions and dilemmas in the LA system, 4) paradoxical demands of mentors, and 5) what constitutes "fairness," "equity," and "responsibility" in LA.

- Design recommendations for responsible LA systems, synthesized from mentors and extant literature, provide guidelines for responsible instructors, responsible students, and responsible institutions.

- Further implications suggest a continuing need for an engagement at the systems level in questions of ethical relationality, the production of learners as data-subjects, and considering the possibilities of agency, transparency, and choice.

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1. Introduction

The field of learning analytics (LA) contributes new possibilities for data-driven approaches in education with the aim of supporting teachers and learners and optimizing learning environments and pedagogy. LA includes the use of artificial intelligence (AI), data-mining, and other digital technologies, vastly expanding the collection and uses of learner data. The recent explosion of data has begun to raise concerns about ethical and privacy issues, especially highlighting questions of equity, responsibility, and fairness (Holstein & Doroudi, 2019; Prinsloo & Slade, 2018; Slade & Prinsloo, 2013). Stakeholders, including teachers and learners, are often insufficiently trained to engage in potential ethical issues (Buchanan, 2019). While LA has the potential to decrease stakeholder vulnerability by identifying areas of concern that might otherwise be missed, such an approach may also increase susceptibility to forms of surveillance, stereotyping, and tracking with harmful consequences (Mackenzie et al., 2014; Prinsloo & Slade, 2016). With these concerns in mind, there is a need for more diverse and critical perspectives to build a responsible LA. Multiple stakeholder voices must be considered when understanding this emerging area of ethical complexity, including learners, teachers, designers, institutions, and corporations. This paper contributes perspectives from undergraduate mentors, people in the joint position of teacher and learner, whose voice has not thus far been included in this conversation. Those interviewed for this study mentored secondary school students using a digital interface that provided the mentors with access to a learning analytics report with data on mentee activity on the digital platform. Their perspectives provide a new layer of insight into conceptual mapping for building responsible LA.

This study contributes a socio-critical lens to urgent and emergent questions of responsible LA surrounding data, privacy, and ethical awareness of mentors and mentees, with a focus on perceptions of trust and risk, agency, and context. Although the theoretical discussion of the issues and side effects of LA or using technologies such as AI has long existed (see D'Ignazio & Klein, 2020; Noble, 2018; O'Neil, 2016), few studies examine actual responses and on-the-ground concerns in the field (Tsai et al., 2021). Furthermore, this study explores power relationships, duty, and the dynamics and complexities surrounding the agency of the involved parties and individuals in the context of a six-week online mentorship program.

Mentoring as an educational and interactional context has been minimally examined in the field of LA, yet has the potential to provide important insights precisely due to the unique context and expectations of mentor–mentee relationships, educational but often without the constraints of learning standards or traditional assessments. Through the perspectives of four mentors, this empirical study explores responsibility, fairness, and equity in LA. In-depth phenomenological interviews with four mentors who used LA in their mentoring practice provide valuable insights and implications. Conceptually, an existing framework for responsible LA developed by Slade and Prinsloo (2013), Hacking's (1982, 1986) dynamic nominalism, and Levinas's (1989) ethics of responsibility are brought together, providing a useful heuristic to map the ethical reasoning and the paradoxes of LA and its implications. Specifically, this study responds to a phenomenon shared by four mentors who recounted hiding from mentees that they had seen their LA data. In-depth interviews explored the moral discomfort these four mentors expressed in earlier interviews conducted as part of a larger study. Their reflections contribute insight and design guidance in response to the question of what constitutes "responsible" LA. This study complements and expands existing ethical frameworks, extending how we view ethical thinking in the context of LA and contributing empirical evidence from mentoring.

2. Ethics in the Literature of Learning Analytics

Widespread controversy and apprehension about the continuously increasing surveillance by LA systems and related technologies has led to multiple efforts in conceptual works, principles, standards, and checklists, introducing ways of thinking about ethical issues and sparking ongoing discussion (Drachsler & Greller, 2016; Ferguson et al., 2016; Pardo & Siemens, 2014; Sclater, 2016; Slade & Prinsloo, 2013; Swenson, 2014; Tsai et al., 2019; West et al., 2016; Willis, 2014). Still, there is relatively little empirical literature in the field of LA exploring issues of student data privacy and consent (Slade & Prinsloo, 2013) or student perceptions and agency concerning the gathering and processing of their data (Ifenthaler & Schumacher, 2016; Kruse & Pongsajapan, 2012). More work is needed to explore the ethical complexities that arise in LA systems as lived by participants themselves.

Prinsloo and Slade (2015, 2016, 2018) recognize educational organizations as having a duty to provide efficient and adequate learning experiences, including the use of LA to that end. However, an outstanding risk that student data may be misused or abused increases student vulnerability (Prinsloo & Slade, 2015). Prinsloo and Slade (2015, 2016) provide a framework for learner agency "exploring ways to decrease student vulnerability, increase their agency, and empower them as *participants* in LA to move from quantified data objects to qualified and qualifying selves" (2016, p. 178).

Trust is a central construct in educational relationships such as mentoring, yet the construct of trust has received scant attention in LA until recently. Tsai et al. (2021) focus on investigating distrust in data and threats to trustworthy LA from instructors and students in a higher education institution, thereby proposing ways to sustain existing trust. They observed

distrust attributed to 1) the subjectivity of statistics, 2) the fear of diminished authority in unbalanced power relationships, and 3) the design and execution approaches of LA.

Cerratto Pargman and McGrath (2021) remark that ethics in LA has been relatively underrepresented, arguing that responsible LA should be defined in terms of legal, ethical, and effective processes for collecting, analyzing, and reporting student data. Most of the prior empirical research on ethical issues in the LA literature has been concentrated in a few countries and in higher education contexts, representing institutional rather than student views (Cerratto Pargman & McGrath, 2021). The discussions hitherto have been predominantly theoretical and abstract, neglecting practical cases (Arnold & Sclater, 2017; Kitto & Knight, 2019). Kitto and Knight (2019) provide a "practical ethics" conceptualization that draws on virtue ethics to aid practitioners in developing LA systems, calling for more attention to practical viewpoints on ethics in LA.

This paper contributes an ethical conceptualization of responsible LA to examine a phenomenon of ethics-in-practice, heeding the need for voices directly from the field. The study provides insight into how people reason about certain actions and how their views correspond with or contradict various ethical standpoints. This research complements and builds on existing conceptual perspectives and identifies critical concerns to drive future research.

3. Study Purpose

The purpose of this study is to lend the voices of undergraduate mentors to a growing critical conversation on fairness, equity, and responsibility in LA. This empirical study reveals the complexities and dynamics in LA practice resulting from linkages between such phenomena as self-awareness of data ethics and understandings of privacy, perceptions of trust and risk, agency, context, and culture.

While conducting a study on LA for learning design in a virtual mentoring context to understand and support mentors confronted with LA, we discovered an interesting phenomenon that five of six participating mentors avoided disclosing to mentees that they had viewed their LA data (Sung et al., 2022). Therefore, this current study was driven by the initial research questions: How and why did mentors hide from mentees that they had seen their LA data although they were not asked to do so? And how did the LA report facilitate or hinder creating an equitable, fair, and responsible environment in online mentoring situations? More specifically, the study's purpose was to investigate mentor perceptions of LA and any ethical tensions experienced based on the LA practices in a virtual mentoring context. We explored how the LA practice and data influenced mentors — who stand as novice instructors in this case — viewpoints on learners and responsibility, equity, and fairness in the LA system. The frameworks of Slade and Prinsloo (2013), Hacking (1982, 1986), and Levinas (1989) were used to understand the moral hardship the mentors expressed and to map the ethical reasoning, paradoxes of LA, and its implications. Mentor voices are synthesized to propose a design guidance for a responsible LA system.

4. Conceptual Framework

This study examines LA in practice through a socio-critical perspective, regarding ethics not only as a set of abstract principles or as the result of individual, rational decision-making but also as cultural, personal, and professional values enacted in practice (Johnson, 2018; West et al., 2016). Instilled ethical norms can become inextricably embedded in the social, organizational, political, economic, and intellectual systems that people construct (Johnson, 2018; Slade & Prinsloo, 2013). This study emerged from the assumption that mentor use of LA is based on their understandings of the scope, role, and boundaries of LA, as well as a set of moral beliefs based on regulatory and legal, cultural, geopolitical, and social contexts. To further examine these dynamics and critically interrogate what might constitute "fairness," "equity," and "responsibility" in LA, we bring Levinas's (1989) ethics of responsibility together with Slade and Prinsloo's (2013) principles for an ethical framework for LA and draw on Hacking's (1982, 1986) notion of dynamic nominalism to support a critical lens on power.

Levinas (1989) proposes an ethics of responsibility based on an ontology centred on relationality. He asserts that the Other brings us into being; it is only in facing the Other that we come into being ourselves. Hence, he proposes an infinite responsibility to the Other. In the case of a mentor–mentee relationship, Levinas would insist that the mentor only exists as a "mentor" in relation to the existence of the mentee. Hence, even while it is the institution that creates the categories of mentor and mentee, it is the mentee that brings the mentor into being (and vice versa) as a complex, relational, and mutually constituted other, overflowing what any title or category on its own prescribes. While the relations of mentor and mentee are presumed to be educational, they are less clearly defined than those of teacher and student, often sitting outside of traditional institutional contexts that authorize particular dynamics of authority or specific educational goals and outcomes of the relationship. Levinas's attention to an ethics of responsibility to the Other allows for a particular sensitivity to the dynamics of trust and relationship in mentoring contexts. We contend that LA cannot exist as a mere computing system, and Levinas's (1989) ethics of responsibility provides a critical lens on the ethical reasoning of four mentors and suggests implications for building responsible LA in practical contexts.

Slade and Prinsloo's (2013) principles for an ethical framework for LA and Prinsloo and Slade's (2015, 2016) framework for learner agency were used as a lens when analyzing interviews. Prinsloo and Slade work to uncover the uneven power dynamics between institutions and students, focusing on student agency and regarding them jointly as producers and co-interpreters of data. We add Hacking's (1986) concept of dynamic nominalism to this socio-critical perspective, pursuing awareness of how our cultural, political, social, physical, and economic environments, as well as power relationships, impact our reactions to ethical concerns in LA (e.g., Apple, 2004).

Although the purpose of LA is to understand and improve learning and environments, this study explores, from a critical point of view, what has been sacrificed in this process. For example, LA often uses complex data dashboards to display an array of data, suggesting a multifaceted portrait of an individual learner while, in fact, being incapable of attending to or communicating the complexity of context or history of a learner; as such, LA can obscure or even mislead educators in how they make sense of student learning. Hacking (1986) uses the term *dynamic nominalism* to describe the way in which a type of person comes into being simultaneously with the invention of the type itself. Hacking (1986) calls this process "making-up people" and ties it to the invention of statistics and population science, wherein the emergence of surveys and census required categories for enumeration. LA, likewise, by its nature, depends on enumeration. Hacking explains how the act of sorting, naming, and classifying through statistics and number shapes the possibilities for personhood of the individuals classified by those types. He argues that numerous categories that we use to characterize individuals are not pre-existing in the world, as we often come to believe, but rather by-products of the needs of counting itself. The invention of categories such as high-achieving and low-achieving, for example, then provides new ways of conceiving individuals as types (Hacking, 1982). LA is often used to classify learners, creating new categories that then acquire people (McDermott, 2001). While a goal of LA may be to support "at-risk" students, the association of particular sets of data with the label of "at-risk" (for example) simultaneously creates the bounds of the category and casts the categorized student as such. Far beyond identification, the influence of enumerating and categorizing can create what Prinsloo and Slade (2016) term "quantified data objects." As Hacking (1982) explains, "Categories are as responsible to the *need to count uniformly* as they are to any interest in 'correct' diagnosis" (p. 293, italics in original). In contrast, the techno-optimism of the LA field means the stakes and consequences of the creation of data-subjects go unexamined. If LA is to live up to its purported goals of supporting learning opportunities, environments, and outcomes, LA scholarship must lead the way in examining this ethical paradox, "For the avalanche [of numbers] is not merely a quantitative fact but a change in our feeling about the sort of world in which we live" (Hacking, 1982, p. 282).

5. Methodology

5.1. Study Context and Data Collection

S Mentoring Program is an ongoing six-week online mentoring program that supports secondary school students (mentees) through mentorship from undergraduate students (mentors). The focus of the mentorship is to support mentees in their academic pursuits and help them build individual portfolios by providing relations of care and indirect college and field experiences from the mentors. The initiative, organized and facilitated by S University, began in March 2021 with financial support from a city. To date, over 300 secondary school students have participated in the mentorship program.

S Mentoring Program includes synchronous and asynchronous activities. Mentors and mentees interact via a digital online learning platform designed by a local team. Synchronous online sessions use a web-conferencing tool. One mentor meets with two to four mentees together. The program provides a customized "Learning Analytics Report (LA report)" to the mentors containing assigned mentees' visualized data such as word networks, graphs, and charts based on data collected during asynchronous and synchronous activity from the prior weeks (Figure 1). Specifically, mentee clickstream data, postings, and video stream data are collected from asynchronous activity, and transcripts of talk during online mentoring sessions are created from the audio of synchronous sessions. Together these data are used to form the LA reports. Each report includes both individual mentee data and some summarized data for comparative context. The stated purpose of providing the LA report is twofold: 1) to improve the mentoring quality and facilitate in-depth discussions, and 2) to provide mentors with the opportunity to encounter data visualizations and engage in data interpretation to build data literacy. In this sense, the mentor is seen as both a teacher and a learner.
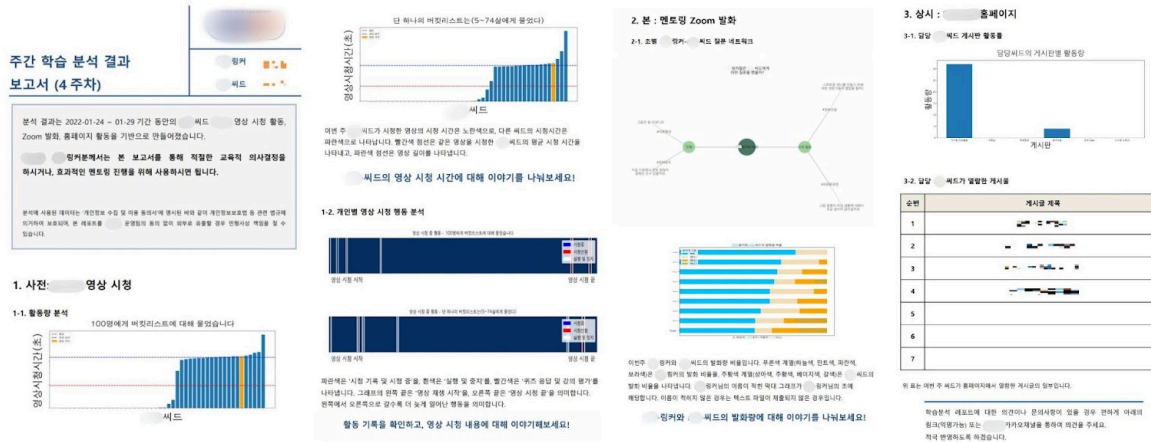
Figure 1. Sample LA report

Note: This is an example of an LA report that a mentor received with LA data from one mentee. It also includes some data summarized across all mentee and mentoring sessions. Analytics represented include (1) visual representation of time spent watching an assigned video (y-axis) by mentee (x-axis); (1.2) visual of click stream data pattern from video watching behaviour, with video streaming (dark blue), pause (white), and quiz taking (red), with each bar representing video watching for one video; (2) conversation analysis of online mentoring sessions using Zoom transcripts represented with a web of most common questions asked (top) and proportion of mentor/mentee talk time by sessions with mentor names on the y-axis, as well as mentor talk in blue and mentee talk in yellow (bottom), (3) representation of mentee time spent (y-axis) in different areas of the digital platform (x-axis); and (3.2) list of websites that a mentee visited through clicking links embedded in the digital platform.

LA data from mentees and online mentoring sessions are collected with the consent of both mentors and mentees; however, the report includes potentially sensitive information like mentee website clickstream data, postings (and the contents), and video stream data when the mentees are assigned video-watching as part of a task. Student data is collected and stored using web-based tools (Figure 2).
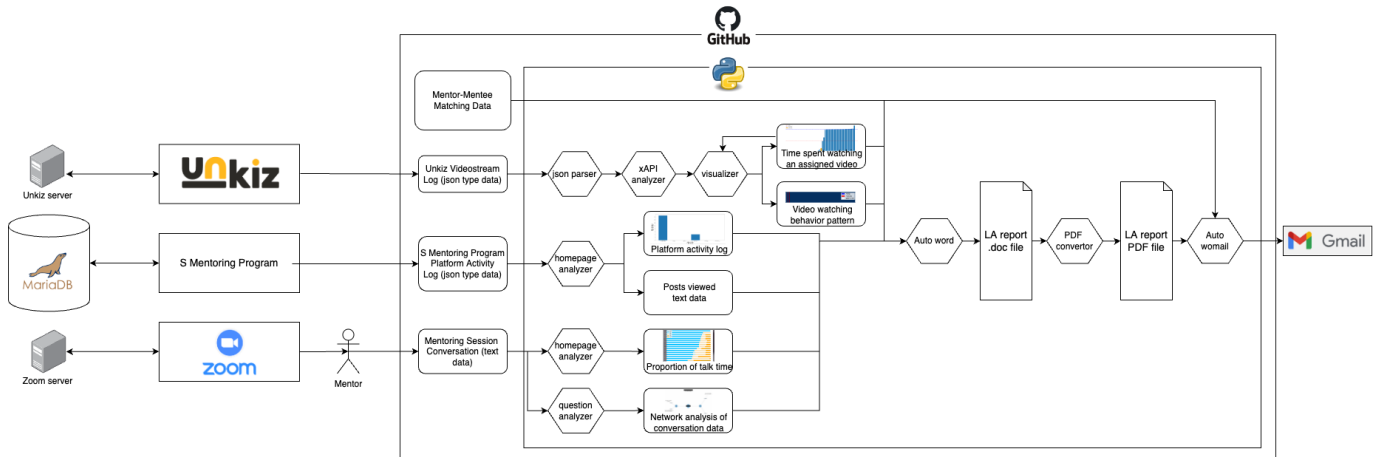

Figure 2. Data pipeline

Note: The design team utilized open AI libraries and Python programming language to modify code for the data preprocessing and data visualizations included in the report. The compilation and transmission of the LA report were thereafter automated. Only mentors received LA reports; mentees did not have access to their reports. The program host organization did not provide mentors with explicit instructions on how to utilize the report beyond obtaining consent from the mentors and mentees for data usage and informing them of how data would be used. This was meant to reduce external pressure or interference while examining the mentors' sense-making process of LA.

Data for the study were collected through three rounds of semi-structured interviews. The first two rounds were originally collected under a larger study focused on understanding how mentors interacted with access to LA (Sung et al., 2022). This study included two interviews with each of the six mentors, lasting 30–40 minutes, conducted after Week 3 and Week 6 of the program. These interviews sought to understand the following research question: How do mentors ask questions of/interpret/respond to the analytics? (Wise & Jung, 2019). Findings suggested that providing the reports helped improve the

quality of mentorship as the mentors devised a variety of customized feedback and scaffolding strategies (Sung et al., 2022). Mentors utilized LA for learning design based on the findings from interpreting the LA reports employing their prior knowledge. The first author served as the study's main researcher throughout its entirety, from topic selection to data collection and manuscript writing. However, in these interviews, five out of six mentors also indicated that, at some point, they hid from the mentees the fact that they had seen the reports containing their data. This happened although mentees had consented to have this data collected, and there was no specific request from the program administrators to hide that they had seen it. The researchers' curiosity surrounding this phenomenon became the impetus of the present study.

Thus, the primary data for the present analysis comes from the third round of interviews conducted to explore this phenomenon (ranging from 3,760 to 9,177 words per interview after translation into English). Participants included four of the five mentees who mentioned hiding the fact that they had seen mentee data (see Table 1 for interviewee demographic data). The fifth mentor was not available for an interview. Semi-structured interviews conducted by the first author via a web-based conferencing tool included questions about challenges, opportunities, and the paradoxes of LA. From the two prior rounds of interviews, there was evidence that mentors in the S Mentoring Program had ethical concerns. Therefore, the interview contained questions about personal thoughts on data ethics/privacy, fairness, equity, and responsibility to understand their behaviours and ethical concerns in the LA practice. Additionally, a scenario featuring an ethical dilemma was used to elicit more detailed descriptions from respondents, minimizing their reliance on potentially unreliable memories (Ratcliffe, 2002). Respondents were also asked to share experiences or perceptions on ethical issues related to LA systems or the complexities of such practices to address how mentors perceive ethical issues through the interview.

The interviews were conducted in Korean, recorded, and then transcribed. The transcription was written in Korean and translated into English by the bilingual first author. Transcriptions were confirmed by another senior researcher and the interpretation of the data was shown and validated by the participants. Secondary data for the analysis includes transcripts from the first two rounds of interviews from the original study.

Table 1. Participant Profiles

Name (Pseudonym)	Age	Undergraduate Major (Year)	Experience as a Mentor	Experience as a Mentee	Analytic Experience
Jina	19	Sociology (2nd)	> 1 year	N/A	Novice
Ion	23	Chemistry (5th)	> 4 years	> 4 months	Novice
Ella	20	Chinese (3rd)	> 3 years	> 2 months	Novice
Summer	23	Music (5th)	> 3 years	> 1 year	Novice

Note: These profiles were done at the time of participation in the S Mentoring Program.

5.2. Data Analysis

Interpretative phenomenological analysis (IPA) of the data was conducted to understand mentors facing ethical tensions surrounding access to and use of mentee LA data in a virtual mentoring context. In this qualitative analysis paradigm, a focused, in-depth investigation of the experiences and stories given by a relatively small number of participants is typically involved (Larkin et al., 2006). IPA seeks to comprehend the phenomenon in question by placing a phenomenological emphasis on the experiential claims and concerns of the study participants (Smith et al., 2021). In-depth interviews are the primary tool for phenomenological studies. Understanding complex phenomena that are insufficiently documented necessitated the use of IPA in this study. All names are pseudonyms, self-selected by the participants.

The study was conducted in three phases. Phase 1 developed initial descriptions of the data, attending closely to participant worlds with the goal of getting as "close" to their view as possible (Larkin et al., 2006). Transcripts were coded descriptively with attention to remarks that could be relevant to the initial research questions. The authors worked together to create a coherent, third-person initial interpretative description of the phenomenon. Phase 2 positioned the initial description from Phase 1 in a broader social, cultural, and theoretical context to provide critical and conceptual analysis. Through Phase 2, the authors developed a more overtly interpretative description, engaging with the conceptual framework surrounding Slade and Prinsloo's (2013) principles for an ethical framework for LA, Hacking's (1982, 1986) notion of dynamic nominalism, and Levinas's (1989) ethics of responsibility. Phase 3 entailed confirmation and consolidation of themes. The proposed descriptions were discussed and re-examined considering the linked transcript segments, as well as each of the other themes and the purpose of the study. The authors reviewed and reached a consensus on the selection of quotations to represent the themes through interviewee voices.

6. Findings

The following aspects were identified in shaping mentor LA interaction, reflection, and use.

6.1. Mentor Perceptions of Affordances and Constraints in LA

All four mentors shared their opinion that the data available through the LA report provided access to information that was previously difficult to obtain. They explained that their pedagogical decision-making was supported by knowing more about student situations or needs and that the LA report also supported reflection on their own teaching (Sung et al., 2022). For example, Ella said, "The advantage is that … the mentor is given much information, which broadens various applications for classes. For example, if the mentee doesn't watch the video repeatedly, we may consider ways to encourage it." Summer said, "I could reflect on myself because this report was very meaningful to me personally, especially when it came to controlling how much I talked." This was a new form of reflection for many of the mentees. Summer, concerned that the students were not sufficiently involved in the mentoring process, stated, "After I saw the report and realized the child didn't do his homework, I had the class watch a video together at the beginning and altered the curriculum…" Therefore, they articulated that LA can play a role in supporting productive learning and mentorship environments.

Mentors also reported that the LA system functioned as a form of accountability that encouraged compliance with the expectations of the program without placing that burden on the mentor–mentee relationship. Jina mentioned, "The good thing [about the LA report] is that if students don't tell us whether they watched the video or not, it's difficult to know for yourself, and if you're dubious about it, you can check it out using the report. Without it, I have to ask students to show proof they watched the video, which could make things awkward." Ion concurred, saying, "It was feasible to keep track of the students or my teaching … with the additional data." In addition, Jina reported that as data were collected remotely and analysis results provided automatically in the form of reports, LA helped bypass cumbersome procedures that required students to prove their performance directly to their teachers, thereby reducing situations that might cause tension in the mentor–mentee relationship. Jina also said she witnessed the improvement of mentee attention by using LA reports. She surmised that mentees were incentivized to focus on assignments and learning activities since they knew their data were being collected and monitored.

While Jina said there was no explicit downside to using LA reports, Ion pointed out, "It seems like it takes much time and energy to make this system work, and compared to that, it's a bit difficult to get a sense of how to use it." Summer also said, "I actually wanted to see a variety of things [in the report]. I thought it would be nicer to have a report that went into more detail about how my mentees changed over time." Whereas Summer desired more details, Ella felt constrained by the information provided in that it directed her attention to specific details of her mentoring practice, implicitly suggesting that those were the most important ones and that she should adjust her mentoring accordingly. She explained, "Because certain information was given [due to the report], it was a bit hard to disregard that information and do the mentoring. Am I talking too much? Shouldn't I make the student talk more? It felt like there was a certain limit like this." Thus, all four mentors perceived that the system constrained their activities, but their perspectives diverged. For some, the LA report was challenging to figure out how to use; for others, it lacked the desired information; for others, the scope of what was provided was an imposition on their mentoring practice, making their mentorship feel constrained.

6.2. Mentor Understanding of the Scope and Boundaries of LA

Across the interviews, mentors used vocabulary such as "nuanced" and "complex" to describe LA and their own experience with it in the context of the mentoring program. Jina said, "It seems to be related to very nuanced emotions." She explained that simply sharing whether you have watched a video or not is different from sharing additional detailed information, such as the duration of a pause in viewing.

> In my school, LMS doesn't just show whether I watched the video or not. If you watch it multiple times, or too fast playback speed, I heard that the professor gets notified. What I feel as an undergraduate is that… For example, if I turn it on through the night [not actually watching] and close the window the next morning, but it's only 15 minutes long, that reveals I turned that off the next morning, so I sometimes hope it just tells I've watched 100%, not with the time-spent watching that video. Of course, it's more about being caught not being a diligent student. But based on my experience, if these mentees watch this video, pause and not watch it for too long, or lose concentration keep turning on and off the video several times, but knowing these are all being shared with their teachers, they might think it's embarrassing or think, later on, if I have to do the similar assignment, I might just keep the video turned on although I do want to watch some parts repeatedly.

Jina further worried that privacy might be violated by viewing a mentee's browsing history. She relates it to her own feelings about potentially revealing interests or future dreams that she wouldn't yet want to be known by others.

> If you [the mentor] see that analysis where you get to observe the student's website activities, you can see that he's interested in something like… If I [as a student or individual] have a specific future dream and I searched

> *for information, but I don't want to reveal that to anyone yet, that would make me uncomfortable…. It's like …*
> *we delete pages-you-visited on Google even if you know nobody has access. In particular, I think [tracking within]*
> *the S homepage could be a bit of a private space.*

Jina's words reference her sense that the degree or limit to which LA should be provided is unclear and that it is complicated by the diversity of emotions different individuals may have about others having access to data about their micro-behavioural engagement or personal interests, such as that captured in clickstream data.

Ion added, "There's always that anxiety and ambiguity." She attributed this sentiment to the lack of clarity on the extent to which data provider information — in this case, mentees — is shared with other parties such as mentors and the host organization; for example, what specifically is collected? From what is collected, what gets shared? Who has access to what is collected and what is shared? And who gets to make these decisions along the way? Ella expressed her feeling about being cautious when reviewing student statistics, which included data as well about her own relative talk time and questions asked as a mentor.

> *I think there's a constant tension that hasn't been resolved … when I participated in other mentoring programs*
> *in the past, I thought and spoke more autonomously, but in this program, I felt somewhat limited and had to*
> *think that this would be tracked in the first place, so something like that I guess it had an impact.*

She felt constrained by the information provided as though it implied directives to change her own mentoring behaviour. In other moments she worried that the LA report would give the mentees the impression that they were being observed and watched would have a detrimental impact on mentoring. This is in striking contrast to Jina's insistence that the LA system reduced the levels of stress in the mentoring relationship. Summer explained, "It's like a double-edged sword." The report was useful in providing feedback on her mentoring but, at the same time left her wanting more access to mentee data beyond what the LA platform provided.

Taken together, the boundaries between privacy, data collection, analysis, and provision of LA are not clear. Mentors pointed out that data ethics are ambiguous and subjective, recognizing that while some may be comfortable with the disclosure of their data, for others, it may be a more sensitive issue. Mentor reflections demonstrated that these ambiguous boundaries and the burden on LA system stakeholders were factors that may have hindered mentor–mentee relationships and, at times, caused the mentors specific ethical dilemmas.

6.3. Ethical Tensions and Dilemmas in the LA System

The LA practice caused mentors to tumble into ethical tensions and dilemmas. Four mentors shared several situations that directly or indirectly affected the trust relationship between mentors and mentees due to the disparity between LA data and mentee verbal accounts of their own engagement with the platform as discussed with mentors. Jina and Ella, for instance, recalled experiencing a sense of disparity when they faced the LA report indicating that tasks were not performed, but in the mentoring session, the mentees told them they had finished the task already. When Jina, Ion, and Summer first encountered this discrepancy, they were tempted to trust mentee remarks more than the data. Rather than doubting mentees, they supposed errors could happen in the LA system during data collection, assuming that there would be some parts that LA could not track. However, Ella discovered the gap and immediately assumed that her mentees had lied. All four mentors attempted to unravel the disparity through several indirect cross-verification methods, such as asking additional questions that could only be answered by performing the task. Furthermore, Ella modified one lesson design to reduce the burden of students performing the task. Summer introduced new incentives and prepared various devices to have students do the assignments. Four mentors said that they avoided direct interrogation or immediate feedback to maintain a stable mentor–mentee relationship, considering the specificity of the mentoring situation where trust is significant.

Mentors spoke about mentor–mentee trust in relation to the LA system. Jina, who experienced the discrepancy, said, "Now I have no choice but to keep in mind that I know this friend was dishonest earlier. That's why I tend to keep an eye on that mentee, presuming he might not have watched the video again." Ion mentioned, "If that [discrepancy] happened so many times, the trust connection would be broken depending on the behaviour the mentee typically showed." Mentors stated that utilizing the LA report also affected the formation of stereotypes and prejudices. The study data indicated an undeniable risk of mentors manipulating student data or forming a prejudice against student performance depending on each mentor's characteristics.

Each mentor had different opinions on the appropriate scope and extent of data collection and disclosure for LA that influenced their individual experiences of ethical tension and moral discomfort. Jina indicated that when she received the LA report, the information included was often more specific or a little different from what she expected, making her feel uncomfortable regardless of whether she felt she had used the report productively or not. Four mentors said that they hid the

fact that they had seen the LA reports from the mentees, in part because they thought it would be more helpful for the mentees to be unaware that they were being monitored or that their information was being shared. Some were uncomfortable about being put in the position of monitoring mentees. Jina and Ion said that they thought it would be better to let mentees participate comfortably rather than informing them that they had seen the report, encouraging them to participate faithfully without reminding them of the LA data being collected. Summer said, "I think I hid it to drive an honest mentorship with my students."

All four mentors expressed concerns that mentioning the LA report would give mentees a feeling that they were being evaluated and surveilled. They feared mentees might feel overwhelmed and burdened by the sense of being monitored, believing it might eventually be a hindrance to the mentoring relationship and forming mutual trust. Ion, for example, explained that since the data was based on observing and monitoring mentees, there is an inherent risk that they may disclose things they did not want to reveal.

Furthermore, Jina and Summer spoke about the fear of deviating from the "conformity" that mentees could feel in consenting to have their back-end data collected. Jina said, "I would agree even if I didn't like it [providing her own data], because even that 'not agreeing' shows something about me," saying she was afraid not agreeing would seem abnormal to somebody. As well, she felt "vicarious embarrassment" and questioned whether it was morally or ethically acceptable to know someone else's information. Ion mentioned, "When I feel like I'm being watched or my thinking is being read, I believe there may be restrictions in building trust or intimacy in the mentorship relationship, so I didn't talk about it to avoid that." Four mentors commonly stated that these ethical tensions and moral hardships might hinder the quality of mentoring. They expected that relief from this ethical tension would eventually help students gain more benefits from the mentorship.

The imbalance of information power and the lack of a communication channel for participant feedback also affected ethical tensions and moral hardships. To solve this problem, Jina suggested that students as data providers need to know what form and to what extent their data are shared with the instructor. They highlighted that even a consent process can be superficial or forced depending on the societal position of the data-utilizing organization. For example, students may assume that the university has their best interests in mind or that the prestige of the university means that they must comply without question.

6.4. The Paradoxical Demands of Mentors

Even given all these concerns, at times mentors also expressed a desire to collect more data from mentees to produce more comprehensive LA reports. They wanted a more detailed analysis to learn about mentees in numerous ways while at also expressing their moral discomfort and ethical tension surrounding that very desire. For example, Ion stressed that the information provided in the report was "limited" and said, "It would be more useful to provide adequate help if I could get more information on which videos they watched or searched, but I felt a little hampered by that limited information." Summer said, "I think I also had a limitation that I couldn't see many of those areas that I wanted to see more in detail because I also wanted to respect their privacy." Mentors wanted specific data and more details to better support mentorship by learning about their independent learning activities and reflecting on their own mentoring practices. At the same time, they realized that those attempts to track more student data could increase their own moral discomfort and lead to further privacy violations in some circumstances. Mentors wanted more information to get a better and closer understanding of their mentees, but on the other hand, they faced an inner voice reminding them of their own responsibility and ethical commitment to protect the privacy of mentees under their tutelage. Therefore, they frequently faced a dilemma and felt ethical tension that their desire for more LA data to support responsive mentoring would jointly function as a means of monitoring or evaluating mentees.

6.5. What Constitutes "Fairness," "Equity," and "Responsibility" in LA?

All mentors emphasized the importance of respecting voluntary intent in one's consent in order to make a responsible LA system. Furthermore, they shared the importance of not being disadvantaged by their intentions. Jina stressed that collecting data for LA is always an "additional" design, not a core procedure of education. She argued that restricting educational services when one does not agree to provide data has the potential to provoke "symbolic dominance," referencing the mechanisms through which subjects come to obey without being subjected to physical force, making them accept the social hierarchy as legitimate or natural.

Ethical tensions and moral discomfort were shown to be related to *transparency*, which is essential in building a responsible LA system. Repeating the information in the consent form to those providing the data was far better than merely having them sign the forms. Mentors stated that their confidence and sense of responsibility were affected by whether mentees were fully aware of their rights. Jina and Summer doubted whether getting consent fully reflected student opinions, mentioning the fear of deviating from *conformity*. Four mentors indicated the need for a step to confirm the data providers' intentions clearly. Summer noted the importance of being transparent with each other in order to form mentor–mentee mutual trust.

All four mentors stressed that the LA system should be designed to facilitate the formation of mutual trust relationships between participants. In addition to obtaining data providers' consent, mentors felt the need for a more systematic approach

and space for feedback whenever mentees feel uncomfortable. For example, they proposed the need for establishing a virtual mentor–mentee communication channel and forming a community where every participant of the LA system can join.

Jina, Ion, and Summer noted that, to be fair and equitable, LA must consider the characteristics and cultural backgrounds of learners. Mentors pointed out that an LA system that uses "big data" and tries to analyze it using various technological methods could leave out much information about children's personalities or cultures. For example, Jina pointed out that children with learning disabilities might not want to disclose information that reveals their learning behaviour, such as their video-watching patterns: "you might not want to show that you're pausing more, but I think it's a system where my authority doesn't work just because I agreed to provide information." Ion said that students from multicultural backgrounds could be supported with approaches that respect the child's culture, such as additional help from a teaching assistant or supporting languages of different countries. Three mentors mentioned that setting up an "opt-in/opt-out" system could be a way to deal with this. Furthermore, they said it should be made clear that the data provider is not disadvantaged by opting out.

7. Design Recommendations for Responsible Learning Analytics Systems

This study proposes design recommendations for responsible LA that bring together the reflections of mentors themselves with extant literature, contributing in a practical way to LA practice in mentoring settings. This may also provide insights for LA in other educational settings. The mentors interviewed in this study were aware of some of the ethical conundrums of LA and provided valuable insight into what they believe responsible LA should entail. As undergraduate students who grew up during the data explosion era and the coronavirus pandemic, they have spent much of their education using online platforms, and extensively sharing their own information. As students themselves, these mentors report gaining new perspectives and understandings about the scope and challenges of LA use in online educational platforms, and they now take a more critical and reflective stance. The design guidance for responsible LA proposed in Figure 3 is the result of synthesizing the views of these mentors regarding what would constitute a responsible LA system, which focuses on the interactions between the three parties that make up the LA mentoring system: instructor (mentor), student (mentee), and institution (S University). The crucial aspects of responsible participation are articulated for each.
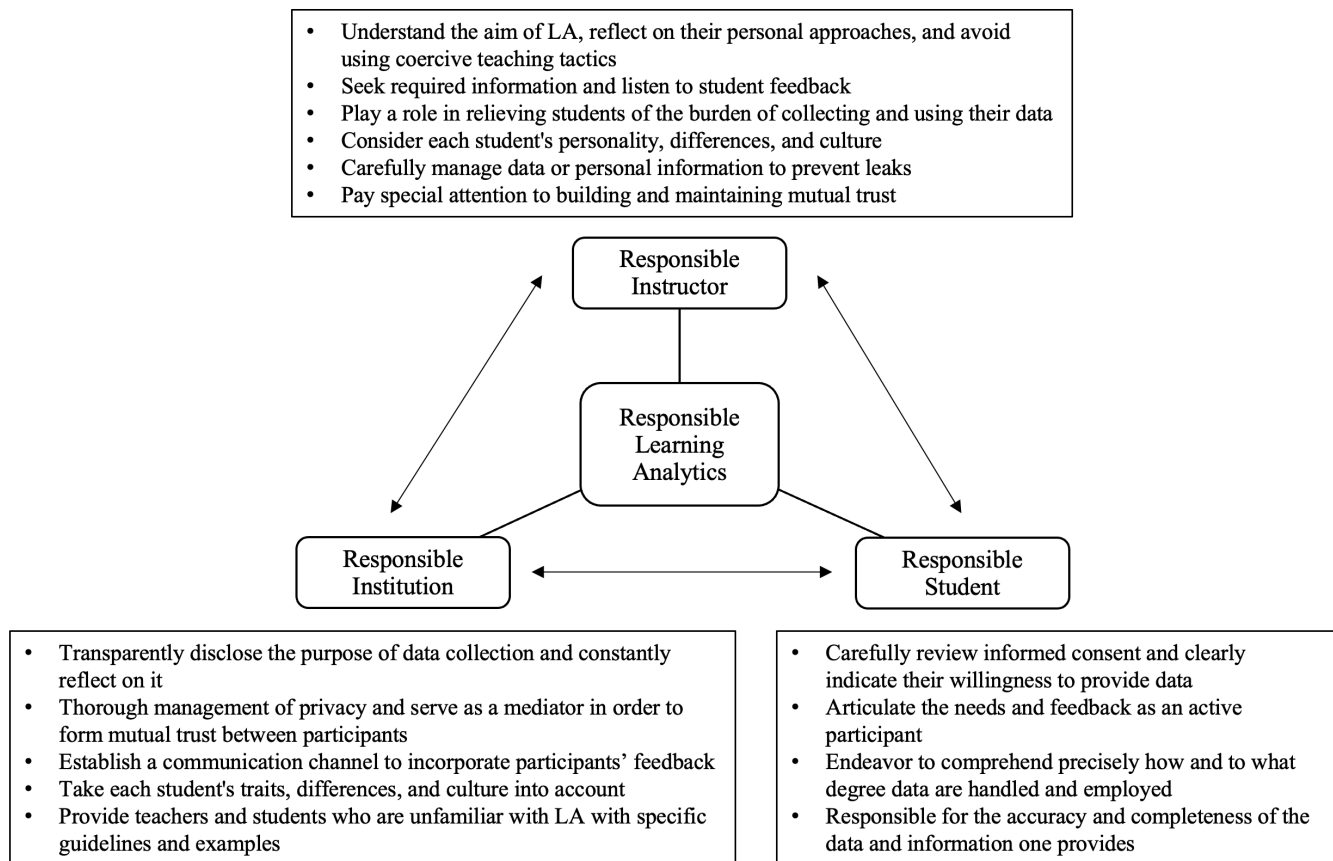

Figure 3. Proposed design recommendations for responsible learning analytics

7.1. Responsible Institution

All four mentors reflected on the position of power and, therefore, the responsibility of the host organization. Responsibilities recommended by the mentors for the host organization included the following:

1. Transparency of purpose for data collection and analysis
2. Privacy management and communication
3. Establishing a feedback loop
4. Attention to individual and cultural differences that are potentially misrepresented in the system
5. Providing guidelines and examples of LA usage

Regarding transparency of purpose, Jina commented, "It's necessary to investigate if collecting this data is indeed beneficial to education, whether it's really worth providing, and whether it breaches any area of privacy… Students should be reminded that the information they offer and receive is not for surveillance, but rather for personalized educational approaches." Ella, concerned about privacy management, reiterated that there should be no problem with data leakage. Highlighting the importance of a feedback loop, Summer noted, "I don't think the LA [system] can be ideal from the start, so I believe it's essential to listen to mentors' comments in between."

Speaking to the need for particular attention to individual and cultural differences, Ella referenced the notion of putting oneself in another's shoes. She specifically remarked that all stakeholders will be able to use the LA system without discomfort only when it draws on the institution's mindset about "how much data I can allow and how much data release would not be uncomfortable if I were the data provider." Jina and Ella pointed out that it is not safe to assume that all teachers are beneficial for a mentee's learning. Therefore, it is important to bring in various tools that can make up for flaws in the system.

7.2. Responsible Instructor

All mentors expressed the importance of understanding the aim of LA, reflecting on their personal approaches as mentors, and avoiding coercive teaching tactics. Ion said she had learned from her own experience that she could only figure out how LA should be used if she knew exactly which information was needed. They identified the need to be considerate of students while also attempting to overcome any ethical issues through various instructional practices. Mentors said that teachers should play a role in relieving students of the burden of collecting and using their data since students may feel unfamiliar with the LA system. The mentors said that they actually did perform this role themselves. Specifically, Ella suggested that teachers imagine how to use the results of the LA when they are given to them. She noted that for instructors to assist in establishing responsible LA, they must contribute to their teaching in a way that encourages students to consider that "allowing them to gather my data serves a meaningful purpose." In addition, mentors mentioned the need to consider each student's personality, differences, and culture, listen to student feedback, carefully manage data or personal information to prevent leaks, and pay special attention to building and maintaining mutual trust.

7.3. Responsible Student

All four mentors said that they had experience participating as mentors or mentees in this or other mentoring programs in the past. To become a responsible student in the LA system, according to them, a learner must carefully review informed consent and articulate the needs and desires as an active participant, not as a passive learner. Two of the mentors highlighted the value of being truthful in one's opinions. Four mentors stated that if mentees clearly indicated their willingness to offer personal information and actively provide feedback, they would be able to alleviate some of their moral discomfort and tension, allowing them to lead mentoring with a clean conscience. Ion said, "It won't be possible to determine how LA should be conducted unless we know precisely what information they (mentees) require." Four mentors suggested that data providers should endeavour to comprehend precisely how and to what degree data is handled and employed and actively communicate their opinions. Furthermore, mentees are responsible for the accuracy and completeness of the data and information they provide, as well as the degree to which they intend to reveal personal information.

7.4. Responsible Learning Analytics

The views expressed by the mentors we interviewed imply that every participant in the LA system should work together to ensure that everyone's voice is heard and that responsible/responsive dialogues are established and sustained. All four mentors mentioned that the enthusiastic efforts of all parties in the LA system of the S Program to support learning helped foster motivation and an atmosphere of mutual care. Jina stated that sincere and passionate individuals within the system inspired her to become a "responsible educator." The mentors said that ensuring everyone is aware of the significance of their role in the education system contributes to the development of a responsible LA.

Still, the host institution holds power in setting the conditions of possibility for a responsible LA system. The small scale of the S Program allowed for a tight feedback loop. Mentors said they felt respected when their opinions were valued and their

feedback was reflected. They added that students should likewise have methods to contact data management agencies directly as part of this feedback loop.

The proposed design recommendations were developed outside of the traditional institutional context of LA in that the host organization was locally designing and implementing the platform. This allowed for a more responsive feedback loop that supported a greater degree of internal accountability and institutional freedom than is present in many LA contexts. Findings suggest that this level of heightened responsiveness, internal accountability, and institutional freedom are all significant for conducting responsible LA practices. The limited scope of the program supported communication about its intentions and those of the parties involved. Furthermore, there was a linkage between transparency, ethical tensions surrounding trust, and mentor confidence in their mentoring decisions. Jina speaks directly to the way the small scale of the S Mentoring LA system and mentoring context itself offered prescient insights:

> *Mentors, as tangible personnel in the real world, have the benefit of being able to provide and convey feedback whenever mentees feel uncomfortable. There were numerous sorts of data utilization in the past in which the data were collected and processed in a hidden location and employed in sites I am unaware of. However, as the learning analytics system collects and processes the learner data so that it can be used directly in the mentoring situation, ethical concerns seem much more apparent and need to be dealt with.*

Implications suggest it would be useful to consider how much openness is needed for each stakeholder, to what extent and why unveiling data or analysis is necessary. As well, it is important to consider how deception should be handled, whether in a small system or a much more expansive one. Each mentor recommended a more organized way to get agreement from the parties; to build a trust between stakeholders, it is important to establish systematic guidelines and a feedback channel.

Still, if we take the goals of LA seriously as providing more systematic and customized feedback to both educators and learners to optimize teaching and learning, we must also recognize that this purpose cannot be achieved by uniform data processing or the application of prescriptive teaching methods. To realize fairness and equity in LA practice, it is necessary to consider what it means to be internally accountable to the vast diversity of characteristics and differences of all learner-participants in the LA system.

8. Discussion and Implications

This study takes a critical perspective regarding fairness, equity, and responsibility in LA as we explore the viewpoints of mentors who participated in LA practice in an online mentoring environment. Discussion and implications derive from integrating mentor voices from this study with Levinas's (1989) ethics of responsibility, Slade and Prinsloo's (2013) principles for an ethical framework for LA, and Hacking's (1982, 1986) notion of dynamic nominalism.

8.1. Ethical Relationality in Mentoring and Beyond

Questions of ethics and responsibility in educational contexts centrally concern how the relations between parties can co-exist to support human learning and development while also entailing an inherent imbalance of power, be it teacher–student, mentor–mentee, parent–child, or between a learner/educator and an institution or the state. Mentors raised concerns about their own position and that of their mentees regarding both the interpersonal relational context and the dynamics of the larger LA system. Mentor concerns about their position as mentors, a joint role of care provider and teacher suggesting forms of authority, as well as a need for trust, resonate with Levinas's (1961) attention to ethical engagement with the Other. Mentors faced unresolvable tension in their position. They found themselves both ethically responsible to and for their mentees as an Other with infinite potential, and simultaneously expected to engage with their mentees through the lens of the LA reports that created portraits of mentees out of data, "quantified data objects" (Prinsloo & Slade, 2016), or a form of data-subjectivity, restricted in detail and limited in possibility (Hacking, 1982).

Mentor–mentee relationships shifted dynamically during and between mentoring sessions due to the LA report, which introduced ethical tensions and dilemmas. In the central dilemma that motivated this study, the mentor–mentee trust relationship was affected by the difference between what was seen of mentees in mentoring sessions and what LA data showed about them. Mentors had to cope with the uniqueness of the mentoring context, in which trust is crucial. The paternalistic nature of collecting learning activity data, the asymmetrical mentor–mentee power relationship based not only on the relative educational position but also on age and university status, and the importance of constructing mutual trust all increased the importance of caring for intersubjective individual agency (Levinas, 1989; Prinsloo & Slade, 2016).

Jina's reflection of "vicarious embarrassment" upon viewing the report can be understood through Levinas's orientation to the Other. It reflects that an individual's ethical orientation to feel the potential embarrassment of the Other they are in

relationship with. LA is fundamentally about collecting and providing access to information that its data subjects may or may not have an understanding, desire, or awareness of being shared. What does it mean for another to know information about you that you are not even aware of? This reinforces asymmetrical social relationships. Prinsloo and Slade (2016) state that the asymmetrical nature of the power relationship makes students more vulnerable: positions around vulnerability "are inevitably intertwined in ways that lead to competing claims about the risks and ethical challenges in the uses of student data versus the complementary and potentially beneficial uses of that data" (p. 161). According to Levinas (1989), such relationships demand responsibility and concern for the other's suffering and well-being. If LA aspires to be a moral practice (Slade & Prinsloo, 2013), it must consider the scope of the "duty of care" toward students from both organizations and teachers, especially considering informational and power asymmetries (Prinsloo & Slade, 2015).

The ambiguous position of the mentor between the organization and the mentee complicates the relationship. The mentors in our study reported lacking clarity on what was expected of them in informing or educating their mentees about the LA reports. According to Mackenzie et al.'s (2014) work, the key responsibility of mentors in the face of identifying vulnerability would be to restore the individual's autonomy. This raises questions about the responsibility of both mentors and the entity that collects participant data for ensuring transparency, security, and reasonable care (Prinsloo & Slade, 2016; Slade & Prinsloo, 2013). Mentors are responsible for building the literacy of mentees about the technical environment in which they are learning and for reminding them that their data is collected and used. This may mean providing students with the information they need to make their own informed, supported decisions rather than adopting the more paternalistic stance of making decisions on their behalf (Prinsloo & Slade, 2016). While communicating this information to students may be difficult, it has the potential to increase transparency and responsibility. In addition, organizations and teachers, and in this case mentors, have a clear responsibility to take every possible means to lower the vulnerability of students and to ensure that data are not exploited outside of its originally intended context.

Even though the ethical tensions cited by mentors emerged in interpersonal relationships, the nature of these tensions suggests they likely could not be fully resolved because they reflect challenges in the system itself. These ethical conundrums might appear as problems of practice to be resolved in practice. However, we suggest that these problems of practice are manifestations of problems within the system with implications for revisiting the design and structure of the system itself.

8.2. Concerning the Learner as a Data-Subject

The formation of new categories and labels through the LA report created new ways of perceiving mentees (Hacking, 1982). According to mentors, using the LA report not only exacerbated ethical issues but also engendered preconceptions about their mentees. Such preconceptions have the potential to increase mentee vulnerability, recasting them as beings conceptualized and categorized in particular ways through LA data. We need to critically examine whether LA approaches are used to fit and enumerate people, creating new ways for them to be, or limiting them (Hacking, 1986). Data collected to compose the report and mentor attempts to connect the data to mentee background information inadvertently amplified the *inherent vulnerability* of some mentees (Mackenzie et al., 2014; Prinsloo & Slade, 2016). For instance, in the case where a mentee claimed to have seen all the videos required for the assignment, but the data did not support this claim, the mentor suspected the mentee of lying. Triangulating this mismatch in verbal and LA reporting with demographic background information and other LA report features may have produced that individual as "a liar." Note the contrast between the construction of personhood as a complex learner — a mentee whose data reflected discrepancies a times, and a "liar." While one remains fundamentally a learner and an Other in the ethical relation of care, the other risks rejection, utterly foreclosed upon as a learner whatsoever.

With the fear of simplifying mentees into data-subjects, mentors expressed paradoxical demands: they desired more data from mentees, including data that might be considered very sensitive, to produce more comprehensive LA reports to support responsive mentoring, *and* they expressed their concerns about adding to mentee stress or causing more privacy and ethical problems by increasing the amount of surveillance in the mentorship. Although mentors wanted more information on the mentees, they agonized over the best course of action as they discovered their responsibilities to mentees. Levinas's attention to ethics emerging in an interpersonal relationship allows a critical viewpoint on these phenomena. Mentors faced the phenomena because, in Levinas's perspective, the presence of the Other (mentees) spoke to the mentors, and in responding, mentors discovered their responsibility to the Other (their mentee; Levinas, 1961). Mentors reflected on how collecting LA data from mentees and having mentors utilize it consolidated the asymmetrical power relationship and led to potential feelings of being surveilled in mentees.

Beyond issues of surveillance, there is a danger that learners will become no more than data-subjects. The techno-optimism (Danaher, 2022) of LA in support of responsive instruction faces real challenges when considered from a critical perspective, noting the increased vulnerabilities of those already vulnerable to being surveilled or produced as subjects with limited educational opportunities. Mentor fears about the overreach of the LA report in influencing their own perceptions of students are perceptive and, in the view of the authors, entirely justified. The level of self-awareness and reflectiveness evidenced in

these four mentors cannot be assumed to be present in all instructors in an LA system. The field of LA must face the question of whether the potential for valuable information is worth the risk of harm to already vulnerable populations.

8.3. Considering the Possibilities of Agency, Transparency, and Choice

Aligning with existing literature, mentors insisted that the host organizations should provide explicit commitments to transparency regarding "what data is collected, for what purposes, with whom the data may be shared, (and under what conditions)" (Prinsloo & Slade, 2015, p. 89). Lack of clear host organization expectations was one reason mentors said they concealed their data access from mentees though they were not explicitly asked to do so. Prinsloo and Slade (2015) deal with the question of power dynamics in LA systems through a focus on agency and its affordance for data providers. Mentors likewise reflected on this concern when they considered the rights of their mentees to choose whether to share their data, or expressed concern about mentee awareness of what was collected, analyzed, and available to mentors.

Although mentors explained their initial desire for additional LA data to improve mentorship quality (see also Sung et al., 2022), it is hard to deny that they became significant panopticon constituents of mentee surveillance as the weeks went by. This was likely accelerated due to a lack of sufficient contextual explanations or guidelines for data use from the host organization. With different or more explicit expectations, mentors could engage proactively with mentees surrounding LA, informing and involving them in the use of both individual and aggregated data. Both the mentors interviewed and the extant literature suggest that improving transparency around LA systems may allow for more trust and co-operation and hence increase the quality of mentorship. In general, informed consent can protect the privacy and rights of both respondent and user. Here, according to the study findings, we suggest that it has another function: to partially alleviate mentor experiences of moral discomfort. Prinsloo and Slade (2015) assert that it is not critical only to get consent and inform students about the implications but also to create a platform for empowering students with the civic agency over their data.

With questions of agency and informed consent in mind, two mentors considered the potential of opt-in or out policies for the LA component of the virtual mentoring program, while another reflected the relative power position of mentors, mentees, and host organization would make it a false choice. Jina and Summer noted that mentees who do not consent might feel pressure to conform to an expected norm. Conformity is "the act of changing one's behaviour to match the responses of others" (Cialdini & Goldstein, 2004, p. 606). People attempt to fit in to the so-called "normal" category by associating themselves with that norm (Hacking, 1986). In this sense, consent and conformity cannot be disentangled, particularly in a situation of power imbalance. Implications suggest that an opt-in/opt-out option is insufficient to provide transparency or agency. Consideration must include how the mentee's perception of choice may be shaped by social context and power imbalance. Anonymity in choice is one possibility, but is likely not feasible when the identifiable analytics collected are directly available to an educator in relation to an individual student. The Other — here, the mentee — is a more vulnerable participant (Slade & Prinsloo, 2013) because even when informed choice is provided, it cannot sit outside the existing social and educational context of power imbalance.

9. Conclusion

This study explored mentor perceptions of the affordances, limits, scope, and boundaries of LA and addressed mentors' ethical tensions and paradoxical demands. Mentor perspectives on the responsibility, equity, and fairness of LA, and on what it means for each partner to act as a responsible participant, provide critical insights, and design recommendations for building a responsible LA system. By integrating mentor voices from this study with the frameworks of Slade and Prinsloo (2013), Hacking (1982, 1986), and Levinas (1989), we reveal that the LA report's existence itself posed ethical tensions and dilemmas for the mentor–mentee relationship and beyond. In addition, the formation of new categories and labels through the LA report brought mentors new ways of perceiving mentees, for instance as data-subjects. Mentor voices, aligning with existing literature, add a new dimension to conceptual mapping for building responsible LA, suggesting the importance of considering possibilities of agency, transparency, and choice. It is noteworthy that such divergence existed among a small group of mentors working in the same context, suggesting even greater divergence in a larger sample or across cultural contexts.

Qualitative approaches are less prevalent than quantitative in LA research, and this interpretative phenomenological study adds thickness to our understanding of LA systems. While the inherently small scale of IPA as a method poses limitations in terms of generalizability, it offers thickly textured empirical insights that provide direction for future research, which must attend to diverse voices, including learners, teachers, designers, institutions, and corporations. Additional future work must examine the epistemological assumptions of LA systems and users and extend a critical examination of teaching, learning, and surveillance in an LA-inundated world.

Declaration of Conflicting Interest

Funding

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