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Improving Stress Management and Emotional Regulation Among Inclusive School Teachers in Hong Kong Through Digital Mindfulness Training

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ABSTRACT

Background: Inclusive-school teachers in Hong Kong frequently experience psychological and physical stress due to diverse classroom demands and limited institutional support. This community service program focused on improving teachers' stress-management competencies through the In-MHARE digital mindfulness platform to support teacher well-being and healthier inclusive learning environments.

Purpose of the Study: This study aimed to strengthen stress management, emotional regulation, coping strategies for physical symptoms, and overall resilience among inclusive-school teachers in Hong Kong.

Methods: The program applied a participatory community-service approach in collaboration with IDN-Global. Activities included online training, structured mindfulness practices, and face-to-face workshops conducted over five months. Quantitative data were collected through pre-test and post-test surveys, while qualitative data were obtained from teacher reflections and field observations.

Results: The findings showed significant improvements across all indicators. Teachers' stress-management ability increased from 45% to 90% (+45%), emotional regulation from 48% to 91% (+43%), coping with physical symptoms from 40% to 88% (+48%), maintaining positive relationships from 52% to 92% (+40%), and overall resilience from 44% to 90% (+46%). Teachers also demonstrated positive behavioral changes, including increased patience, improved communication, and reduced social withdrawal. These findings suggest that digital mindfulness-based interventions supported by community participation can effectively enhance teacher well-being and foster healthier and more inclusive educational settings.

Keywords
Inclusive Educators; Stress Mitigation; Mindfulness; In-MHARE; Community Engagement; Resilience

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Introduction

Inclusive education is a worldwide effort to make sure that all students, no matter what their physical, emotional, or cognitive state is, have the same chance to get a good education. Inclusive schools in Hong Kong offer a wide range of students, including those with special educational needs and those from different cultural and linguistic backgrounds (Calandri et al., 2025). This diversity poses distinct issues for educators, necessitating the adaptation of their pedagogical approaches while simultaneously addressing escalating psychological and emotional demands in their professional responsibilities (Zhang & Luo, 2023).

An initial needs assessment in this inclusive school teacher program with 199 teachers in Hong Kong revealed that there were both strengths and issues. For instance, over 90% of teachers reported being willing to continue working even if they were not being paid. On the other hand, there were also serious stress-related issues, such as headaches, sleep disturbances, and psychosomatic symptoms that were attributed to work-related stress. In addition, nearly 40% of teachers reported difficulty in managing their emotional responses to comments, and some teachers avoided social contact when under stress. These findings indicate that while instructors are highly committed, stress management remains a significant issue that directly influences their work and the learning environment (Bonde, 2022) (Hidajat et al., 2023).

Teacher stress is acknowledged worldwide as a contributing cause to burnout, diminished teaching quality, and inferior student outcomes (Avola et al., 2025) (Braun et al., 2024) (Hidajat et al., 2023). Teachers in inclusive environments are more susceptible due to increased expectations for personalized education, classroom management, and administrative (Calandri et al., 2025). Chronic stress can harm both teachers' health and the success of inclusive education if they don't get enough help (Braun et al., 2024) (Corthorn et al., 2024).

To address this need, our community service project is introducing In-MHARE (Inspiring Mental Health Awareness, Resilience, and Empowerment), an online platform that provides easy access to mindfulness-based stress management training. Mindfulness exercises were found to make individuals feel better and less stressed (Chan et al., 2024) (Cheung et al., 2025). In-MHARE features modules on guided meditation, breathing exercises, and reflective writing that can be utilized by instructors in their day-to-day lives. Some instructors, however, struggle with digital literacy, so they require structured training and coaching to ensure that they are able to maximize the use of the platform.

Mindfulness-based stress reduction programs have been found to be effective for both teachers and healthcare professionals (Hidajat et al., 2023) (Shoker et al., 2024). They enable individuals to manage stress, regulate their emotions, and become more resilient (Bonde, 2022) (Janssen et al., 2024). Implementing this kind of training in schools also benefits the health of students and the classroom environment (Lensen et al., 2024).

The relationship with Indonesian Diaspora Network Global (IDN-Global) makes this project stronger by getting Indonesian teachers who live abroad to work together, making it easier to put into action, and building long-lasting systems of peer support. This partnership lets teachers share their experiences, work together to become stronger, and create a great professional community. This community service program has three main goals that are enhancing the mental well-being of teachers by providing them with effective stress management techniques. Enhancing classroom atmosphere and student results via emotionally regulated and mentally healthy educators. Promoting sustainable change by embedding digital mental health tools within teacher professional learning. Anticipated social benefits comprise a movement toward more supportive school cultures, decreased teacher attrition behaviors, and greater buy-in of mindfulness-based interventions for inclusive classrooms (Avola et al., 2025). Blending qualitative data (teacher self-reflections) with quantitative data (pre- and post-test surveys) guarantees outcomes are evaluated holistically.

Method

The subjects of this community service were 199 Hong Kong instructors from inclusive schools. These educators represented diverse cultural and linguistic backgrounds and were selected because they played a significant role in assisting children with exceptional educational needs. Most of them belong to the Indonesian diaspora, thus making them a critical group for the Indonesian Diaspora Network Global (IDN-Global) to research. The educators were described as being highly committed, yet they were also experiencing high levels of stress from attempting to manage their teaching responsibilities, deal with a diverse classroom, and maintain themselves.

The project was implemented in the context of inclusive schools in Hong Kong with IDN-Global as the main partner. The organization played a crucial role in ensuring effective communication and coordination between the UNESA research team and the educators involved. Additionally, IDN-Global's contribution to the initiative greatly increased its impact by making it possible to reach educators in larger diaspora communities. Through the use of a participatory community organizing approach, which emphasizes collaboration in planning and sharing responsibility among the research team, local organizations, and the target community, the community action planning process was developed (Roozeboom et al., 2020).

Planning began with a needs appraisal through pre-test questionnaires and focus group discussions. Through these, teachers discussed experiencing stress and difficulty managing their emotions. The findings were then discussed together by the UNESA team, IDN-Global, and representatives of teachers, leading to the collaborative development of training modules. Teachers were not just passive recipients; they were also active stakeholders in determining what the intervention would address and how it would be implemented. Their participation made it possible to ensure that the curriculum addressed their actual needs, was compatible with their timetables, and was relevant to problems they encountered in inclusive classrooms.

The community service project utilized a mixed quantitative–qualitative research approach. Quantitative data were gathered from pre-test and post-test surveys aimed at assessing stress levels, emotional regulation, coping styles, interpersonal relationships, and teacher resilience. The pre-test instrument consisted of 35 items categorized into five indicators: stress management, emotional regulation, coping with physical symptoms, maintaining positive relationships, and overall teacher resilience. Sample statements included teachers' ability to remain calm when facing work problems, maintain positive relationships with colleagues, and manage stress-related physical symptoms. The complete questionnaire is provided in Appendix A. Qualitative data were gathered from teacher reflections, online discussion forums, and field observations, which offered deep insights into the lived experiences of the participants. A hybrid learning model was used, taking advantage of the In-MHARE application and Zoom meetings for online interventions, combined with offline workshops that encouraged hands-on experience, demonstration of stress-reduction strategies, and peer-to-peer interaction (Abdigapbarova et al., 2025). earlier research has shown that hybrid approaches enable accessibility in community-based education initiatives and help individuals learn new skills.

Table 1. Summary of Pre-Test Instrument Indicators

Variable	**Indicator**	**Number of Items**	**Sample Statement**
Stress Management	Ability to manage work pressure and deadlines	8	"I remain calm when facing work problems."
Emotional Regulation	Emotional control and positive thinking	7	"When my opinion is rejected, I stay positive."
Physical	Ability to cope with stress-	6	"I can sleep well even when I have

Symptom Coping	related physical symptoms		piled-up work."
Positive Relationships	Interpersonal communication and social interaction	7	"I have good relationships with my colleagues."
Teacher Resilience	Motivation, optimism, and self-improvement	7	"I am aware of my weaknesses at work and try to compensate by working harder."

The stages of activity happened one after the other. The preparatory step included making training materials, changing the In-MHARE platform so that teachers could use it, and working with IDN-Global. After that, there was the online training stage, when teachers learned about the basics of mindfulness and how to use the In-MHARE software. The offline phase was place in Hong Kong and included workshops where teachers worked together, role-played, and learned by doing. After these sessions, an evaluation stage took place. This stage included both pre- and post-test questionnaires and instructor reflections to see if the students' stress management abilities and mental health had gotten better. The last part of the program was follow-up efforts, such as making a structured training module, keeping records of activities, writing scholarly and popular publications, and making plans to expand the program to other diaspora schools abroad. The following flowchart shows the process for formulating and executing the strategy:

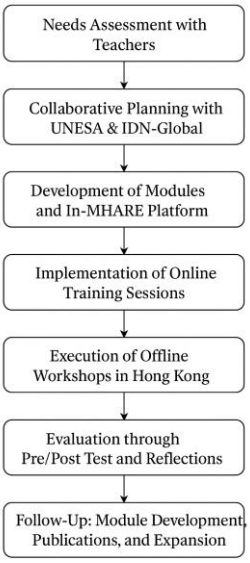


Figure 1. The Working Flow Chart

Result

The implementation of stress management training through the In-MHARE application was conducted over five months in several sequential stages, beginning with the preparation of training modules and technical adjustments to the digital platform, followed by online training sessions, offline workshops in Hong Kong, and post-intervention evaluations. The program consisted of eight online mindfulness sessions delivered through Zoom and the In-MHARE platform, complemented by three offline workshops conducted in Hong Kong. Each online session lasted approximately 90 minutes, while offline workshops were conducted intensively over two full days. The average participant attendance rate reached 92%, and approximately 89% of teachers successfully completed all In-MHARE learning modules and reflective exercises.

The assistance process combined technical action in the form of guided mindfulness practice with programmatic action such as group discussions, simulations, and peer mentoring. Teachers actively participated in both individual and collective activities, enabling them to integrate mindfulness practices into their professional and personal lives.

The findings indicated that before the training, many teachers experienced physical stress symptoms such as headaches, insomnia, and stomach pain (Corthorn et al., 2024). Participants also reported emotional reactivity, including being easily offended by criticism, as well as social withdrawal behaviors such as limiting interactions with colleagues or isolating themselves.

Table 2. Improvement After Training (Post-Test Results)

Indicator	Pre-Test (Before Training)	Post-Test (After Training)	Improvement
Ability to manage stress	45%	90%	+45%
Emotional regulation	48%	91%	+43%
Coping with physical symptoms	40%	88%	+48%
Maintaining positive relationships	52%	92%	+40%
Overall teacher resilience	44%	90%	+46%

After the five-month training, post-test results showed that 90% of participants demonstrated measurable improvements in their ability to regulate emotions, manage stress-related symptoms, and maintain constructive professional relationships.

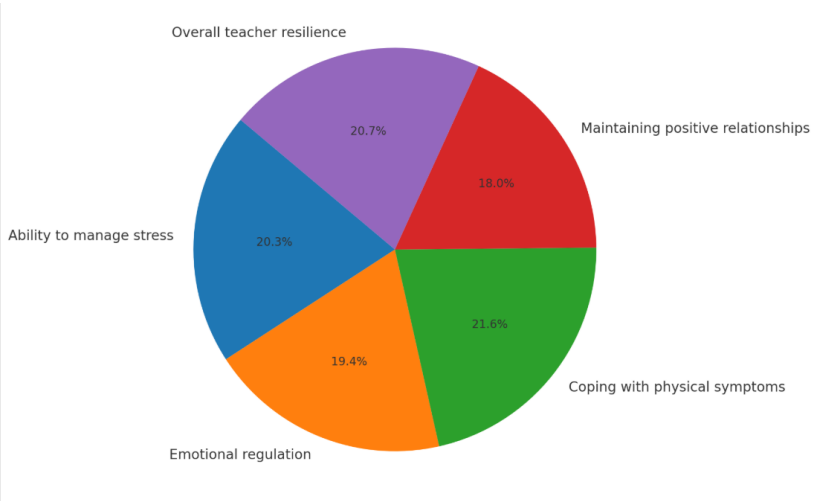


Figure 2. Percentage of Improvements by Indicator

The diagram shows the percentage of improvement in teachers' resilience skills after training. The biggest improvement was in coping with physical symptoms (48%), making up the largest slice. This is followed by overall teacher resilience (46%), ability to manage stress (45%), emotional regulation (43%), and maintaining positive relationships (40%). In short, all areas

improved significantly, with the greatest progress seen in handling physical symptoms and overall resilience.

Beyond the quantitative improvements, qualitative findings revealed important social transformations. Teachers began applying mindfulness exercises in daily routines, showing increased patience, self-regulation, and constructive professional interactions. They also developed a collective awareness of stress management as a shared responsibility rather than an individual weakness. Several teachers emerged as local leaders, volunteering as facilitators of mindfulness groups, promoting sustainability and institutional transformation within inclusive schools.

Discussion

The implementation of stress management training for inclusive school teachers using the In-MHARE application demonstrated a notable evolution from an individual-focused intervention toward broader community and institutional transformation. From a theoretical perspective, these findings are consistent with contemporary scholarship emphasizing that mindfulness-based interventions (MBIs) effectively reduce psychological distress, improve emotional regulation, and strengthen professional resilience among educators (Jennings & Greenberg, 2009) (Emerson et al., 2017). Initially, teachers engaged in guided mindfulness exercises such as breath awareness, reflective journaling, and emotional monitoring not only as personal coping mechanisms, but also as strategies for fostering collective well-being within the school environment. This finding aligns with Kabat-Zinn's mindfulness theory, which conceptualizes mindfulness as purposeful, non-judgmental attention to present-moment experience that enhances adaptive psychological functioning (Kabat-Zinn, 1994). In educational settings, mindfulness practices have consistently been associated with reductions in burnout, emotional exhaustion, and occupational stress among teachers (Hwang et al., 2017). A 2024 randomized controlled trial involving elementary school teachers reported significant reductions in perceived stress and improvements in emotional regulation and classroom climate following participation in a Mindfulness-Based Stress Reduction (MBSR) program, with effects sustained for up to three months post-intervention (Lensen et al., 2024). Similar findings were reported by Roeser et al (Roeser, 2013)., who demonstrated that mindfulness training contributes to improved teaching efficacy, emotional awareness, and classroom management. These studies reinforce the current findings that mindfulness interventions can function not merely as therapeutic techniques, but also as catalysts for organizational adaptation and resilience building.

From the perspective of resilience theory, the intervention reflects a process whereby individual adaptive capacities gradually contribute to collective institutional resilience (Masten, 2014). Teachers who developed stronger self-awareness and emotional control through the In-MHARE modules appeared more capable of managing classroom pressures and supporting colleagues facing similar stressors. This supports the argument that resilience in educational organizations emerges not solely from structural policy, but also through interpersonal networks, collaborative coping, and shared emotional resources (Gu & Day, 2007). Indeed, the emergence of peer leaders acting as mindfulness facilitators illustrates a transition from individual resilience to communal resilience. This phenomenon aligns with Bandura's social learning theory, which posits that behavioral adoption is strengthened through observation, modeling, and peer reinforcement (Bandura & Walters, 1977). Teachers who observed colleagues successfully integrating mindfulness practices into daily routines became more motivated to adopt similar behaviors. Consequently, mindfulness practices evolved into a socially reinforced culture rather than remaining isolated personal habits. An eight-week online mindfulness intervention involving 139 teachers further demonstrated improvements in anxiety reduction, emotional balance, and professional efficacy, with outcomes influenced by individual temperament and personality traits (Mendelson et al., 2023). This finding parallels the present study, where participants displaying

higher intrinsic motivation and personal commitment responded more positively to the In-MHARE modules. Such evidence suggests that mindfulness interventions may achieve greater effectiveness when adapted to individual psychological characteristics and contextual teaching demands.

The theoretical framing of mindfulness as an emotional regulation mechanism is further supported by Gross's emotion regulation theory, which explains how individuals consciously modify emotional responses to maintain adaptive functioning under stressful conditions (Gross, 1998). In this study, the reported 90% improvement in emotion regulation and stress coping strategies indicates that mindfulness training enhanced teachers' capacity to manage emotional reactions constructively, thereby reducing impulsive stress responses and supporting sustained professional engagement. Previous studies similarly found that online mindfulness interventions significantly decrease occupational stress while improving emotional stability among educators and healthcare professionals (Hülsheger et al., 2013) (Spijkerman et al., 2016).

Furthermore, recent developments in digital mindfulness scholarship highlight the increasing role of technology-assisted interventions in sustaining long-term behavioral change. A 2025 study examining everyday mindfulness practices emphasized that digital accessibility, continuous reminders, and community support systems significantly enhance adherence to mindfulness routines (Borgers et al., 2025). The integration of the smartphone-based In-MHARE platform with peer-group mindfulness sessions in this study reflects this hybrid model, combining technological facilitation with interpersonal accountability mechanisms. Such an approach resonates with socio-technical systems theory, which argues that sustainable organizational change emerges from the interaction between technological tools and social structures (Trist, 1981). The community organizing process observed in this intervention from participatory planning and collaborative workshops to peer-led mindfulness circles and reflective evaluations also reflects principles of participatory empowerment theory (Zimmerman, 2000). Teachers were positioned not merely as intervention recipients, but as active contributors and facilitators of institutional change. This participatory process fostered ownership, increased engagement, and strengthened the sustainability of mindfulness practices within the school context. At the institutional level, the intervention encouraged what organizational theorists describe as institutional reflexivity: a collective awareness of stress as a systemic issue rather than an isolated personal problem (Cunliffe, 2003). By normalizing discussions around stress management and emotional well-being, schools began to cultivate a more supportive professional culture. This finding is consistent with systematic reviews demonstrating that teacher well-being contributes not only to improved classroom climate and teacher retention, but also to broader organizational effectiveness and student outcomes (Acton & Glasgow, 2015) (Harding et al., 2019).

Importantly, the present findings extend previous literature by demonstrating how digital mindfulness interventions in inclusive school settings can stimulate leadership emergence, peer collaboration, and organizational culture transformation simultaneously. While prior studies have predominantly focused on individual psychological outcomes, this study highlights the social diffusion effects of mindfulness practices within educational institutions. The progression from individual stress reduction toward collective institutional transformation illustrates how emotionally regulated individuals can become agents of organizational resilience and cultural change.

In summary, the observed improvements in teacher well-being and the subsequent social transformations are theoretically grounded in mindfulness theory, emotion regulation models, resilience frameworks, social learning theory, and socio-technical perspectives. The program demonstrates that individual-level changes—such as stress reduction, enhanced emotional regulation, and improved coping strategies—can catalyze broader institutional transformation through peer-led leadership and hybrid digital-human support mechanisms. These findings reinforce the view that quality education depends not only on pedagogical competence, but also

on teacher wellness as a foundational component of sustainable educational systems. Consequently, participatory, technologically supported, and community-based mindfulness interventions may represent an effective strategy for strengthening teacher well-being and organizational resilience in inclusive schools.

Conclusion

This community service project using the In-MHARE application showed that stress management training can greatly improve the well-being of inclusive school teachers in Hong Kong. After the program, post-test results showed a 90 percent improvement in teachers' ability to manage stress, control emotions, and maintain positive relationships at work. Teachers also reported fewer health complaints and felt more resilient in facing classroom challenges. The program not only helped individual teachers but also created social change. Teachers started to practice mindfulness regularly, became more aware of the importance of mental health, and some even acted as local leaders by guiding mindfulness groups for their peers. This shows that small personal changes can grow into collective improvements for the whole school community.

Based on these results, three recommendations can be made. First, stress management programs like this should be included in teacher training and professional development. Second, the In-MHARE application should continue to be improved so it is easy for all teachers to use. Third, similar programs should be expanded and continued in other inclusive schools, both in Hong Kong and in other countries where Indonesian teachers work. In short, this project proved that simple mindfulness-based training, supported by technology, can make teachers healthier, stronger, and more connected while also building a better and more inclusive school environment.

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Conflicts of Interest

The authors declare no conflict of interest.

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Appendix A

The following questions were used in the pre-test survey to assess teachers' stress levels, physical symptoms, and emotional regulation prior to the intervention:

Table A1. Pre-Test Questions

No	Question
1	Recently, I have experienced headaches when deadlines are approaching.
2	I rarely sweat excessively when facing deadlines.
3	Workplace problems make it difficult for me to defecate.
4	I can sleep well even when I have piled-up work.
5	I feel stomach pain when work accumulates.
6	My blood pressure remains normal even if deadlines are not finished.
7	Recently, reprimands from my supervisor make me easily offended.
8	My mood remains good even if many work targets are not completed.
9	Piled-up work makes me forgetful.
10	Work makes me more patient in dealing with others.
11	When work is too heavy, I feel worthless.
12	I happily accept advice from my colleagues.
13	I limit my relationships with colleagues to stay focused.
14	I have good relationships with my colleagues.
15	I often isolate myself when overwhelmed with work.
16	I speak kindly to colleagues even when opinions differ.
17	Recently, I have felt less confident because many tasks remain unfinished.
18	I remain humble even when I often receive praise.
19	I feel happy when my opinion is accepted in group discussions.
20	When my opinion is rejected, I stay positive.
21	I remain calm when facing work problems.
22	Differences of opinion with colleagues make me uncomfortable.
23	I am always optimistic when there are difficult office tasks.
24	I feel confused when I cannot complete work on time.
25	Unresolved work problems make me lose motivation.
26	Unresolved work problems make me anxious.
27	When colleagues share their problems, I just try to stay positive.
28	I often finish tasks in a hurry.
29	I tend to be patient with people who hurt me.
30	When colleagues share problems, I always think negatively.
31	I try to be an achiever at work even without bonuses.
32	I am unaware of my weaknesses at work and lack motivation to improve.
33	I actively attend seminars outside the office to enhance my

Table A1. Pre-Test Questions

	skills.
34	When my work potential increases, I always demand excessive rewards.
35	I am aware of my weaknesses at work and try to compensate by working harder.

Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). An excerpt of the results is shown below:

Table A2. Distribution of Pre-Test Responses

No	Question	Strongly Agree (SA)	Agree (A)	Disagree (D)	Strongly Disagree (SD)
1	Recently, I have experienced headaches when deadlines are approaching.	47	76	57	19
2	I rarely sweat excessively when facing deadlines.	46	37	77	39
3	Workplace problems make it difficult for me to defecate.	0	34	165	0
4	I can sleep well even when I have piled-up work.	0	76	96	27
5	I feel stomach pain when work accumulates.	0	78	121	0
6	My blood pressure remains normal even if deadlines are not finished.	39	100	45	15
7	Recently, reprimands from my supervisor make me easily offended.	9	31	56	103
8	My mood remains good even if many work targets are not completed.	21	24	153	0
9	Piled-up work makes me forgetful.	42	76	69	12
10	Work makes me more patient in dealing with others.	20	144	23	12
11	When work is too heavy, I feel worthless.	0	144	55	0
12	I happily accept advice from my colleagues.	33	86	70	10
13	I limit my relationships with colleagues to stay focused.	0	78	121	0
14	I have good relationships with my colleagues.	34	85	70	10
15	I often isolate myself when overwhelmed with work.	0	78	121	0
16	I speak kindly to colleagues even when opinions differ.	0	78	121	0
17	Recently, I have felt less confident because many tasks remain unfinished.	0	78	121	0
18	I remain humble even when I often receive praise.	34	85	70	10
19	I feel happy when my opinion is accepted in group discussions.	22	176	1	0

Table A2. Distribution of Pre-Test Responses

20	When my opinion is rejected, I stay positive.	0	78	121	0
21	I remain calm when facing work problems.	22	176	1	0
22	Differences of opinion with colleagues make me uncomfortable.	0	78	121	0
23	I am always optimistic when there are difficult office tasks.	22	176	1	0
24	I feel confused when I cannot complete work on time.	22	176	1	0
25	Unresolved work problems make me lose motivation.	0	78	121	0
26	Unresolved work problems make me anxious.	22	176	1	0
27	When colleagues share their problems, I just try to stay positive.	22	176	1	0
28	I often finish tasks in a hurry.	0	78	121	0
29	I tend to be patient with people who hurt me.	22	176	1	0
30	When colleagues share problems, I always think negatively.	0	78	121	0
31	I try to be an achiever at work even without bonuses.	22	176	1	0
32	I am unaware of my weaknesses at work and lack motivation to improve.	0	11	184	4
33	I actively attend seminars outside the office to enhance my skills.	0	78	121	0
34	When my work potential increases, I always demand excessive rewards.	0	5	188	6
35	I am aware of my weaknesses at work and try to compensate by working harder.	144	55	0	0