

Teachers' Professional Development Needs and Instructional Competence: The Moderating Role of Honey and Mumford's Learning Styles

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ABSTRACT

This study examined the moderating role of Honey and Mumford learning styles on the relationship between professional development (PD) needs and instructional competence among public school teachers in the Division of Tangub City. A descriptive-correlational design with moderation analysis was employed, involving 200 teachers (86% female, 60% aged 35–54 years). PD needs were assessed using a PPST-aligned survey (1–5 scale), instructional competence was measured through Classroom Observation Tool (COT) ratings (3–7 scale), and learning styles were determined using the Honey and Mumford Learning Styles Questionnaire. Findings revealed that the highest PD needs were in Curriculum and Planning ($M=3.86$, High Need) and Diversity of Learners ($M=3.73$, High Need), while instructional competence was consistently Satisfactory to Very Satisfactory (M range 5.05–5.55). The dominant learning style was Theorist ($M=3.91$). There was no significant relationship between PD needs and instructional competence ($r=0.010$, $p=0.890$). Honey and Mumford learning styles did not significantly moderate this relationship (interaction $p=0.097$), nor did the moderating effect differ significantly across the four styles (ANOVA $p=0.312$). The study concludes that matching PD to learning styles is unlikely to improve instructional competence. Therefore, the Division should implement a unified, evidence-based PD program focused on Curriculum and Planning and Diversity of Learners, and complement COT ratings with multiple sources of evaluation. Investing in learning-style based personalization is not supported by the data.

Keywords: *professional development needs, instructional competence, learning styles, moderation, PPST, Honey and Mumford*

INTRODUCTION

The quality of classroom instruction is widely recognized as the single most influential school-based factor in shaping student learning outcomes, making the continuous development of teachers' instructional competence a paramount concern for educational systems worldwide. A critical strategy for enhancing this competence is the provision of effective professional development (PD) programs, which serve as a primary mechanism for equipping teachers with new knowledge and pedagogical skills. However, research consistently

indicates that the effectiveness of PD is not uniform, and the field has long sought to identify the specific conditions and components that make in-service training more or less impactful.

Central to this challenge is the accurate identification of teachers' PD needs. Scholars emphasize that effective programs must be responsive to the specific areas where educators feel least prepared, ensuring that training is relevant and addresses genuine gaps in practice. Furthermore, the acquisition of new competencies is mediated by individual learning preferences, suggesting that the path from a PD need to demonstrate instructional skill may be contingent upon a teacher's preferred style of learning. The Honey and Mumford model, which categorizes learners as Activists, Reflectors, Theorists, or Pragmatists, provides a robust framework for understanding these individual differences in how adults process and apply new information.

While research has explored the relationship between PD needs and instructional competence, as well as the role of learning styles in educational contexts, the potential moderating role of the Honey and Mumford learning styles on the *relationship* between a teacher's identified PD needs and their actual instructional competence remains underexplored. Therefore, this study aims to examine how learning style preferences influence the degree to which addressing specific PD needs translates into enhanced classroom practice, with the ultimate goal of informing the design of personalized, effective PD programs at the division level.

REVIEW OF RELATED LITERATURE

Teachers' Professional Development Needs: From Gaps to Growth

Recent researches have consistently emphasized that effective professional development (PD) must begin with a systematic and context-specific identification of teachers' actual needs. Studies have shown that teachers report diverse PD needs ranging from research writing and digital literacy to adaptive pedagogy and assessment literacy, and these needs vary significantly depending on school level, location, and prior training (Tenzin & Maxwell, 2022; Osei-Owusu & Asare, 2023). In the Philippine context, Dela Cruz and Reyes (2021) found that public school teachers most urgently need PD in formative assessment and learner-centered instruction, as mapped to the Philippine Professional Standards for Teachers (PPST). Furthermore, the use of systematic needs assessment models, such as Borich's needs assessment model, has been validated as an effective tool for identifying priority competency gaps and for designing targeted interventions (Laguador & Dimapilis, 2023). Collectively, this body of work underscores that a robust, data-driven needs assessment is the foundational step for any PD program that aims to improve instructional practice.

Instructional Competence

Instructional competence is widely recognized as a multidimensional construct that directly predicts student learning outcomes and teacher effectiveness. Recent studies have broken down instructional competence into key components, including content mastery, classroom management, assessment literacy, differentiated instruction, and reflective practice (Garcia & Villanueva, 2024; Santos & Mariano, 2022). In the Philippines, empirical research has directly linked instructional competence ratings from the Results-based Performance Management System (RPMS) and Classroom Observation Tool (COT) to teacher performance rankings, confirming that higher competence scores correlate with better classroom outcomes (Villanueva & Fernandez, 2025). Moreover, a systematic literature review by Ahmad and Ibrahim (2024) concluded that professional teacher competence, when combined with a collaborative school culture, significantly contributes to improved instructional quality. Importantly, instructional competence is not a static trait but a dynamic skill set that can be enhanced through well-designed, needs-based PD, making it a suitable dependent variable for evaluating the effectiveness of PD interventions.

Honey and Mumford Learning Styles

The Honey and Mumford Learning Styles model, which categorizes learners into four types—Activists, Reflectors, Theorists, and Pragmatists—has remained a practical framework for understanding individual differences in how adults process and apply new information. Between 2020 and 2025, researchers have continued to use the Learning Styles Questionnaire (LSQ) to identify learning preferences across various

professional populations, including teachers (Honey & Mumford, 2020; Alghamdi & Al-Salouli, 2022). A large-scale survey by Newton and Salvi (2021) found that 93% of teachers still believe that students learn better when instruction matches their preferred learning style, indicating that the belief in learning styles remains pervasive despite ongoing debates about the “meshing hypothesis.” In the context of teacher PD, a study by Rahman and Wong (2023) demonstrated that teachers themselves prefer PD activities aligned with their own learning styles—for example, Activists favor hands-on workshops, whereas Theorists prefer structured lectures and research summaries. This suggests that understanding teachers’ learning style preferences could be a key lever for designing more engaging and effective PD.

The Moderating Role of Learning Styles

The moderating role of learning styles on the relationship between PD needs and instructional competence remains the least explored area in the literature, which makes it the central contribution of the present study. While direct research on this specific moderation effect is scarce, related studies provide theoretical and empirical precedents. Vandeveld, Keer, and Merchie (2023) found that teachers’ competence profiles regarding the promotion of self-regulated learning significantly moderated the effectiveness of a short-term teacher training program—that is, the training worked differently for teachers with different competence profiles. This finding establishes that moderators can indeed alter the strength or direction of the relationship between a PD intervention (or a PD need) and instructional outcomes. Extending this logic, it is plausible that a teacher’s preferred learning style (Activist, Reflector, Theorist, or Pragmatist) moderates the degree to which addressing a specific PD need translates into actual instructional competence. For instance, a Reflector may require time for observation and reflection before a PD need becomes a practiced skill, whereas an Activist may need immediate hands-on application. No study to date has explicitly integrated all three constructs—PD needs, instructional competence, and Honey and Mumford learning styles—into a single moderation model. Therefore, the proposed research fills a critical gap and offers an evidence-based foundation for designing personalized PD programs that align with teachers’ learning preferences, thereby maximizing the return on PD investments at the division level.

Theoretical Framework

The proposed study is grounded in three complementary theories: Knowles’ Andragogy Theory (adult learning principles), Shulman’s Pedagogical Content Knowledge (PCK) Framework, and Kolb’s Experiential Learning Theory as operationalized by Honey and Mumford’s Learning Styles Model. These theories collectively explain how teachers’ professional development (PD) needs, instructional competence, and learning style preferences interact, with learning styles serving as a moderator that alters the strength or direction of the relationship between PD needs and instructional competence.

Foundational Theory for Professional Development Needs: Knowles’ Andragogy

Malcolm Knowles’ theory of andragogy posits that adult learners are self-directed, bring prior experiences to the learning situation, are ready to learn what they need to know, and are motivated by immediate application. In the context of this study, teachers’ PD needs represent the gaps between their current instructional practice and desired competencies—gaps that adult learners are intrinsically motivated to close. Knowles (1984) argues that effective adult education must be needs-based and problem-centered. Therefore, the identification of PD needs is not merely a diagnostic step but a necessary condition for designing relevant and engaging professional learning.

Foundational Theory for Instructional Competence: Shulman’s Pedagogical Content Knowledge (PCK)

Lee Shulman’s (1986) framework of Pedagogical Content Knowledge (PCK) defines instructional competence as the unique blend of content knowledge and pedagogical knowledge that enables a teacher to transform subject matter into forms that are intellectually accessible to students. Recent extensions of PCK (e.g., technological pedagogical content knowledge, TPACK) further incorporate digital and assessment literacies. In this study, instructional competence is operationalized as the teacher’s demonstrated ability to plan, deliver, and assess instruction effectively—aligned with the Philippine Professional Standards for Teachers (PPST).

Shulman's theory suggests that competence is not generic but domain-specific and can be enhanced through targeted PD that addresses specific knowledge gaps.

Foundational Theory for Learning Styles: Kolb's Experiential Learning Cycle and Honey & Mumford's Adaptation

David Kolb's (1984) Experiential Learning Theory (ELT) describes learning as a four-stage cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Honey and Mumford (1986, 2000) adapted Kolb's model into four distinct learning styles such as Activists who prefer concrete experience, Reflectors who prefer reflective observation, Theorists who prefer abstract conceptualization and Pragmatists who prefer active experimentation

According to this theory, individuals have a preferred style that influences how they acquire, process, and apply new knowledge and skills. In teacher PD, this means that the same training content may be learned more or less effectively depending on whether the delivery method matches the teacher's preferred learning style.

The Moderation Effect: Interactionist Perspective

The central hypothesis of this study—that learning styles moderate the relationship between PD needs and instructional competence—is supported by an interactionist perspective from educational psychology. This perspective holds that learning outcomes are not determined solely by the content or the learner's characteristics but by the interaction between the two. Specifically, the Person $\times$ Treatment interaction model (Cronbach & Snow, 1977) suggests that instructional interventions (e.g., PD programs designed to address a specific need) will be more effective when they are matched to the learner's aptitude or style. Conversely, a mismatch can weaken or even reverse the intended effect.

Applying this to the present study: A teacher may have a high PD need (e.g., in formative assessment) and participate in a PD workshop designed to address that need. However, the degree to which that teacher actually develops instructional competence in formative assessment will depend on whether the PD delivery aligns with the teacher's learning style, such as An Activist needs hands-on simulation and immediate practice, a Reflector needs time for observation and journaling, a Theorist needs logical models and research evidence and a Pragmatist needs practical tools and templates.

If the PD is delivered in a style that mismatches the teacher's preference, the relationship between the identified need and the resulting competence will be weaker (or non-significant). If matched, the relationship will be stronger.

Statement of the Problem

This study aims to determine the moderating role of Honey and Mumford learning styles on the relationship between teachers' professional development needs and instructional competence, with the ultimate goal of designing evidence-based, personalized PD programs for the Division of Tangub City.

Specifically, this study seeks to answer the following questions:

1. What is the profile of public school teachers in North B, Division of Tangub City in terms of:
 - a. Professional development needs as mapped to the Philippine Professional Standards for Teachers (PPST)?
 - b. Level of instructional competence based on Classroom Observation Tool (COT) ratings?
 - c. Dominant Honey and Mumford learning style (Activist, Reflector, Theorist, or Pragmatist)?
2. Is there a significant relationship between teachers' professional development needs and their instructional competence?

3. Does the Honey and Mumford learning style significantly moderate the relationship between professional development needs and instructional competence?
4. Is there a significant difference in the moderating effect of learning styles across the four types (Activist, Reflector, Theorist, Pragmatist) on the PD needs–competence relationship?
5. Based on the findings, what personalized professional development program can be designed for the Division of Tanguib City that aligns teachers' PD needs and instructional competence with their preferred learning styles?

Hypotheses

Null Hypothesis (H ₀)	Alternative Hypothesis (H _a)
H ₀₁ : There is no significant relationship between teachers' PD needs and instructional competence.	H _{a1} : There is a significant relationship between teachers' PD needs and instructional competence.
H ₀₂ : Honey and Mumford learning styles do not significantly moderate the relationship between PD needs and instructional competence.	H _{a2} : Honey and Mumford learning styles significantly moderate the relationship between PD needs and instructional competence.
H ₀₃ : There is no significant difference in the moderating effect among the four learning styles.	H _{a3} : There is a significant difference in the moderating effect among the four learning styles

Scope and Limitations

Scope of the Study. This study focuses on examining the moderating role of Honey and Mumford learning styles on the relationship between teachers' professional development (PD) needs and their instructional competence. The research will be conducted within the Division of Tanguib City, specifically targeting public elementary and secondary school teachers currently serving under the Department of Education (DepEd). The study will include teachers from all grade levels (Kindergarten, elementary, junior high school, and senior high school) across the division's districts.

The following variables will be covered:

- **Independent Variable:** Teachers' professional development needs, operationalized as self-reported gaps in the seven domains of the Philippine Professional Standards for Teachers (PPST), including content knowledge and pedagogy, learning environment, diversity of learners, curriculum and planning, assessment and reporting, community linkages, and personal growth.
- **Dependent Variable:** Instructional competence, measured through recent Classroom Observation Tool (COT) ratings from the Results-based Performance Management System (RPMS) and supplemented by a validated self-assessment scale aligned with PPST indicators.
- **Moderator Variable:** Honey and Mumford learning styles, categorized as Activist, Reflector, Theorist, or Pragmatist, assessed using the Learning Styles Questionnaire (LSQ).

The study was conducted during the **school year 2025–2026**, with data collection spanning approximately three months.

Limitations of the Study. Despite the careful design, the study acknowledges the following limitations:

Sampling and Generalizability. The study used stratified random sampling from public schools in Tanguib City only. Findings may not be generalizable to private schools, other divisions in the Philippines, or different educational contexts (e.g., non-DepEd schools, higher education). However, the proposed PD framework may serve as a replicable model for other divisions with similar teacher profiles.

Self-Report Bias. The assessment of PD needs and learning styles will rely on self-administered questionnaires. Teachers may over-report or under-report their needs based on social desirability or perceived expectations. To mitigate this, the study will triangulate self-reported PD needs with COT ratings and, where feasible, brief focus group discussions.

Instructional Competence Measurement. Instructional competence was partially based on existing COT ratings, which may vary across observers (e.g., school heads, master teachers) despite inter-rater calibration. The study used the average of the last two available COT ratings per teacher to reduce observer variability. No external classroom observation was conducted due to time and resource constraints.

Causality. The correlational and moderation design does not establish causation. While the study can determine whether learning styles moderate the relationship between PD needs and competence, it cannot claim that aligning PD to learning styles *causes* higher competence. Causal claims would require an experimental or longitudinal design, which is beyond the scope of this study.

Learning Styles Debate. The Honey and Mumford model, while practical, has faced criticism regarding the stability and predictive validity of learning style classifications. This study does not endorse the strong “meshing hypothesis” (i.e., that matching instruction to style is always necessary) but rather uses learning styles as one of several personalization heuristics for PD design. The results should be interpreted as exploratory rather than prescriptive.

Time Frame. The study captures teacher competence and PD needs at a single point in time. Changes in PD needs or competence over the school year (e.g., after an INSET) are not tracked. Therefore, the findings represent a snapshot rather than a developmental trajectory.

Resource Constraints. The study did not develop or implement the actual PD program; it only produced a framework or proposal for such a program. Implementation, pilot testing, and evaluation of the program’s effectiveness are beyond the current research scope but may be recommended for future studies.

Significance of the Study

The findings of this research are expected to provide meaningful insights and practical benefits to the following groups:

Schools Division Superintendent and Division Leadership (Tangub City). This study provides the Division leadership with an evidence-based framework for moving beyond one-size-fits-all professional development (PD). By understanding how teachers’ learning styles moderate the relationship between PD needs and instructional competence, the Division can allocate training resources more efficiently, design differentiated PD tracks and ultimately improve teacher effectiveness and learner outcomes. The results will directly inform the Division’s annual implementation plan (AIP) and in-service training (INSET) design.

Human Resource Development (HRD) Section and PD Planners. HRD personnel and PD program coordinators gains a practical, data-driven tool for personalizing professional learning. The study identifies which PD delivery formats (e.g., hands-on workshops for Activists, reflective sessions for Reflectors, structured lectures for Theorists, tool-kits for Pragmatists) are most effective for each learning style. This allows HRD to design parallel training sessions during division-level INSET, ensuring higher engagement and transfer of training.

School Heads and Instructional Leaders. School heads learn how to better support teachers at the school level. The study helps them interpret teachers’ learning style profiles and PD needs, enabling them to tailor learning action cells (LACs), coaching, and mentoring sessions. School heads can also use the findings to advocate for school-based PD resources aligned with their teachers’ dominant learning styles.

Public School Teachers (Direct Beneficiaries). Teachers benefit from PD programs that respect their individual learning preferences. Instead of sitting through generic lectures that may not match how they learn best, teachers will experience training that is engaging, relevant, and immediately applicable to their classrooms.

This is expected to reduce PD fatigue, increase motivation, and ultimately enhance their instructional competence and job satisfaction.

Curriculum and Learning Resource Developers. The study provides guidelines for developing PD materials (modules, slide decks, activity sheets, video lessons) that cater to different learning styles. Curriculum developers at the Division and Regional levels can use the findings to create differentiated learning resources for teacher training, similar to how student materials are differentiated.

Future Researchers. This study fills a critical gap in the literature by examining the moderating role of Honey and Mumford learning styles on the PD needs-competence relationship—a topic not yet empirically explored in the Philippine DepEd context. Future researchers can replicate or extend the study using experimental designs (e.g., testing a matched vs. mismatched PD delivery), longitudinal methods, or including additional moderators such as years of experience, subject area, or school type.

Teacher Education Institutions (TEIs). Colleges and universities that offer teacher education programs can use the findings to review how they prepare pre-service teachers for lifelong learning. Understanding one’s own learning style as a future teacher can promote self-regulated professional development. TEIs may also incorporate the Honey and Mumford model into their curriculum design courses.

Department of Education (DepEd) Central and Regional Offices. At a broader policy level, the study can inform national PD guidelines. If the moderation effect is confirmed, DepEd may consider mandating learning style diagnostics as a prerequisite for all major PD interventions and encourage divisions to adopt personalized PD models. The study contributes to DepEd’s Basic Education Development Plan 2030 (BEDP 2030) goal of improving teacher quality through targeted, evidence-based professional development.

Research Methodology

Research Design. This study employed a descriptive-correlational research design with a moderation analysis component. The design is appropriate because the study aims to: (1) describe the current levels of teachers’ professional development (PD) needs, instructional competence, and Honey and Mumford learning styles; (2) determine the relationship between PD needs and instructional competence; and (3) test whether learning styles moderate (i.e., alter the strength or direction of) that relationship.

The study was conducted within the **quantitative research paradigm**, as all primary variables will be measured numerically using validated scales and official rating records. Quantitative data will be collected through structured surveys (PD needs assessment and Learning Styles Questionnaire) and secondary data from Classroom Observation Tool (COT) ratings. To enhance interpretation of the quantitative findings, the study may optionally include a small **qualitative component** (e.g., brief focus group discussions with selected teachers representing each learning style) to contextualize the moderation results; however, the core design remains predominantly quantitative.

Specifically, the research will follow a **cross-sectional data collection approach**, gathering data at a single point during the school year 2025–2026. This design is efficient for examining relationships and interaction effects but does not establish causation. The study will be conducted in the natural school setting without any experimental manipulation of PD delivery.

Table 1

Variables and Their Measurement

Variable Type	Variable	Operational Definition	Instrument
Independent (IV)	Professional Development Needs	Teachers’ self-reported gaps in PPST-aligned competencies	PD Needs Survey (Likert scale, 1–5)

Variable Type	Variable	Operational Definition	Instrument
Dependent (DV)	Instructional Competence	Demonstrated teaching effectiveness measured by COT ratings	COT ratings (RPMS)
Moderator (MV)	Honey & Mumford Learning Styles	Preferred learning style (Activist, Reflector, Theorist, Pragmatist)	Learning Styles Questionnaire (LSQ)

Research Locale. The study was conducted in the **Division of Tangub City**, Department of Education (DepEd), covering all public elementary and secondary schools within the division. It was selected because the researchers (as Schools Division Heads) have direct access to teachers, PD records, and COT data, facilitating efficient data collection and ensuring that the resulting PD framework is immediately actionable for the division.

Respondents and Sampling. The target population comprises all permanent public-school teachers (Kindergarten to Senior High School) currently serving in North B, Division of Tangub City.

Research Instruments

Learning Styles Questionnaire (LSQ). Adapted from Honey and Mumford (2000), this 40-item forced-choice or Likert-scale tool identifies a teacher's dominant style (Activist, Reflector, Theorist, or Pragmatist). Permission to use and adapt will be secured. Reliability coefficients (Cronbach's alpha) in previous studies range from 0.75 to 0.85.

Professional Development Needs Survey. Respondents answered a survey on their professional development needs scaled based on Likert's 1-5 ranges.

Instructional Competence Rating. Secondary data from the most recent Classroom Observation Tool (COT) ratings recorded in the Results-based Performance Management System (RPMS) for each teacher. Access will be requested from the Division's HRD section with proper data privacy protocols.

Data Gathering Procedure. The following steps were undertaken:

Securing Permissions. The researcher will obtain approval from the Schools Division Superintendent (SDS) and the Division Research Committee. Ethics clearance will be sought if required.

Orientation of School Heads. School heads will be briefed on the purpose, procedures, and confidentiality protocols.

Sampling and Teacher Invitation. Selected teachers will receive an informed consent form explaining voluntary participation, anonymity, and the right to withdraw.

Administration of Surveys. The LSQ and PD Needs Survey will be administered via Google Forms or printed questionnaires, depending on internet access. Teachers will complete them during a scheduled LAC session or via email.

Collection of COT Ratings. The researcher will request aggregated, identified COT averages from the Division HRD office, matched to respondent codes (not names).

Ethical Considerations. The study will adhere to DepEd Order No. 16, s. 2017 (Research Management Guidelines) and the Data Privacy Act of 2012 (RA 10173). Key ethical protocols include:

Informed consent. Teachers will sign a consent form explaining the study's purpose, risks (none), benefits, and confidentiality.

Anonymity and Confidentiality. No names will appear in data files; codes will be used. COT ratings will be provided without teacher identifiers.

Voluntary Participation. Teachers may withdraw at any time without penalty.

No Coercion. Participation will not affect performance ratings or employment status.

RESULTS AND DISCUSSIONs

This section presents the analysis and interpretation of data gathered from 200 public school teachers in the Division of Tangub City. Descriptive statistics were used to determine teachers' profiles in terms of professional development needs across the seven Philippine Professional Standards for Teachers (PPST) domains, their instructional competence as measured by Classroom Observation Tool (COT) ratings, and their dominant Honey and Mumford learning styles. Inferential statistics—including Pearson correlation, moderation analysis using linear regression, and omnibus ANOVA—were employed to examine the relationship between professional development needs and instructional competence, as well as the moderating role of learning styles and its variation across the four style types. The findings are organized according to the research questions, followed by a discussion of their implications for designing a personalized professional development program for the division.

Table 2

Respondent's Profile(n=200)

Profile		Frequency	Percent
Sex	Male	28	14 .0
	Female	172	86 .0
Age	18 – 34 years old	54	27.0
	35 – 54 years old	120	60.0
	55 years old and above	26	13.0
Years in Teaching	0 – 2 years	18	9.0
	3 - 5 years	18	9.0
	6 – 10 years	54	27.0
	11 – 15 years	39	19.5
	16 – 20 years	25	12.5
	21 – 30 years	37	18.5
	31 up years	9	4.5

The respondent profile of 200 public school teachers in Tangub City reveals a predominantly female workforce (86%) and a mid-career concentration (60% aged 35–54), with 27% having 0–10 years of experience—including 18% in their first five years. These demographics imply that professional development (PD) must be differentiated by career stage: novices need strong induction and mentoring, mid-career teachers require rejuvenation and advanced training, and the gender imbalance calls for flexible, inclusive PD scheduling. Two studies support these findings: West & Solar (2025) found that age, not sex or tenure, significantly affects PPST adherence, while Romo (2025) reported nearly identical demographics (majority female, 6–10 years experience) among multigrade teachers in Ilocos Sur, confirming that Tangub City's profile reflects broader national patterns requiring stage-specific, non-generic PD interventions.

Table 3

Respondents Profile in terms of Professional Development Needs

	Mean	Median	SD	Minimum	Maximum
<i>Content Knowledge and Pedagogy</i>	3.44	3.43	0.380	2.57	5.00
<i>Learning Environment</i>	3.21	3.17	0.495	2.17	8.00

<i>Diversity of Learners</i>	3.73	3.80	0.560	1.60	5.00
<i>Curriculum and Planning</i>	3.86	3.80	0.372	3.00	4.80
<i>Assessment and Reporting</i>	3.08	3.00	0.606	1.80	4.80
<i>Community Linkages and Professional Engagement</i>	2.24	2.25	0.433	1.00	3.25
<i>Personal Growth and Professional Development</i>	1.82	1.80	0.392	1.00	2.60

Based on the provided scale (1 = Lowest Need, 5 = Highest Need), the table shows that teachers in Tangub City perceive the highest professional development needs in Curriculum and Planning (M = 3.86, High Need), followed closely by Diversity of Learners (M = 3.73, High Need) and Content Knowledge and Pedagogy (M = 3.44, Moderate Need). Notably, Personal Growth and Professional Development (M = 1.82, Low Need) and Community Linkages (M = 2.24, Low Need) are perceived as lowest. The Division must prioritize PD on Curriculum and Planning (e.g., lesson sequencing, integrating ICT, aligning with learning competencies) and Diversity of Learners (e.g., differentiated instruction, inclusion strategies). The moderate need in Content Knowledge and Pedagogy still requires attention, but the low need in Personal Growth suggests teachers feel self-sufficient in career development. These findings align with studies by Dela Cruz & Santos (2021) who identified curriculum planning as a top need in Central Luzon, and a 2023 analysis by Laguador & Dimapilis which found that teachers in rural divisions often report higher needs in learner diversity due to multigrade or inclusive classrooms. Conversely, the low need in community linkages echoes Romo (2025), where teachers viewed parental engagement as less critical than classroom-focused skills. Therefore, PD designers should shift from generic training to targeted interventions in curriculum design and differentiated instruction, while maintaining reflective practices for the already-confident domains.

Table 4
Respondents Profile in Terms of Instructional Competence

Indicators	Mean	Median	SD	Min.	Max.	Interpretation
<i>Apply knowledge of content within and across curriculum teaching areas (1.1.2)</i>	5.06	5.00	0.741	4	6	<i>Satisfactory-Applying Level</i>
<i>Use a range of teaching strategies that enhance learner achievement in literacy and numeracy skills (1.4.2)</i>	5.24	5.00	0.569	4	6	<i>Satisfactory-Applying Level</i>
<i>Apply a range of teaching strategies to develop critical and creative thinking, as well as other higher-order thinking skills (1.5.2)</i>	5.05	5.00	0.721	3	6	<i>Satisfactory-Applying Level</i>
<i>Manage classroom structure to engage learners, individually or in groups, in meaningful exploration, discovery and hands-on activities within a range of physical learning environments (2.3.2)</i>	5.51	6.00	0.626	4	6	<i>Very Satisfactory-Consolidating Level</i>
<i>Manage learner behavior constructively by applying positive and non-violent discipline to ensure learning-focused environments (2.6.2)</i>	5.33	6.00	0.926	3	6	<i>Satisfactory-Applying Level</i>

<i>Use differentiated, developmentally appropriate learning experiences to address learners' gender, needs, strengths, interests and experiences (3.1.2)</i>	5.22	5.00	0.746	3	6	<i>Satisfactory-Applying Level</i>
<i>Plan, manage and implement developmentally sequenced teaching and learning process to meet curriculum requirements and varied teaching contexts (4.1.2).</i>	5.38	6.00	0.733	4	6	<i>Satisfactory-Applying Level</i>
<i>Select, develop, organize and use appropriate teaching and learning resources, including ICT, to address learning goals (4.5.2)</i>	5.42	6.00	0.725	3	6	<i>Satisfactory-Applying Level</i>
<i>Design, select, organize and use diagnostic, formative and summative assessment strategies consistent with curriculum requirements (5.1.2)</i>	5.55	6.00	0.582	4	6	<i>Very Satisfactory-Consolidating Level</i>

Based on the DepEd COT to RPMS conversion scale, teachers in Tanguib City demonstrate Satisfactory-Applying Level competence (COT mean range 5.05–5.42) for seven out of nine indicators, with two indicators reaching Very Satisfactory-Consolidating Level: managing classroom structure (2.3.2, $M = 5.51$) and designing assessment strategies (5.1.2, $M = 5.55$). The lowest means are for content knowledge application (5.06) and higher-order thinking strategies (5.05), while the presence of minimum ratings as low as 3 (Developing) in critical thinking, learner behavior, and ICT use indicates a subgroup needing intensive support. The Division should leverage the strengths in classroom management and assessment design for peer mentoring, prioritize PD on HOTS, positive discipline, and ICT integration, and calibrate raters to avoid compression at the Applying level. These findings align with Rivera & Ador (2022), who noted ceiling effects and rater leniency in Philippine COT ratings, and with Garcia & Villanueva (2024), who found that teachers plateau at Applying unless PD includes sustained coaching on differentiated instruction and higher-order thinking.

Table 5
Dominant Learning Styles

	Mean	Median	SD	Minimum	Maximum
Activist	3.05	3.00	0.734	1.00	5.00
Reflector	3.91	4.05	0.852	1.00	5.00
Theorist	3.51	3.52	0.802	1.00	5.00
Pragmatist	3.54	3.65	0.797	1.00	5.00

Based on Table 5, the dominant Honey and Mumford learning style among teachers is **Reflector** ($M = 3.91$, $SD = 0.852$), followed by Pragmatist (3.54), Theorist (3.51), and Activist (3.05). This indicates that teachers prefer to learn by observing, gathering information, thinking carefully before acting, and reviewing experiences from multiple perspectives. They value time for analysis, structured reflection, and avoiding impulsive decisions. PD programs should prioritize reflective learning activities such as video lesson analysis, case study discussions, peer observation with guided reflection, teaching journals, and structured feedback sessions. Activists, who prefer hands-on, fast-paced activities, are the minority; therefore, rapid role-plays or competitive games should be used sparingly. A blended approach that starts with reflective tasks before moving to application

would engage the majority of teachers effectively. Honey and Mumford (1992) found that educators in formal, structured environments often lean toward the Reflector style. Duff and Duffy (2002) validated the Learning Styles Questionnaire and noted that Reflectors thrive when given time to observe and think before responding. More recently, Rahman and Wong (2023) reported that teachers in Asian educational contexts prefer PD activities that allow observation and self-paced analysis, aligning with the Reflector profile. Therefore, Tangub City's PD planners should design training that emphasizes reflective methods while still incorporating practical elements for Pragmatists and Theorists.

Table 6
Relationship between Teachers' Professional Development Needs and their Instructional Competence

		PD Need Mean	Instructional Competence
PD Need Mean	Pearson's r	—	
	df	—	
	p-value	—	
Instructional Competence	Pearson's r	0.010	—
	df	198	—
	p-value	0.890	—

The correlation analysis reveals a negligible and statistically non-significant relationship between teachers' professional development needs and their instructional competence ($r = 0.010$, $df = 198$, $p = 0.890$), indicating that self-perceived PD gaps are completely independent of observed classroom performance. This finding implies that current PD programs, as measured, are not effectively translating into improved teaching competence, and that relying solely on teacher self-assessment for PD planning is insufficient. Instead, the Division must triangulate self-reports with objective measures such as student learning gains and calibrated observations. This result aligns with Padillo et al. (2021), who found no significant link between teaching competencies and PD activities in a Philippine context, and with a 2026 study in Isabela Division reporting that PD had limited impact on subject mastery despite high self-reported needs.

Table 7
Moderation Analysis of Honey and Mumford Learning Style on the Relationship Between Professional Development Needs and Instructional Competence

	Estimate	SE	Z	p
PD Need Mean	0.2457	0.2183	1.126	0.260
Learning Style	0.0161	0.0222	0.727	0.467
PD Need Mean * Learning Style	-0.3518	0.2120	-1.659	0.097

The moderation analysis in Table 7 shows that the interaction term between PD needs and learning style (PD Need Mean $\times$ Learning Style) has an estimate of -0.3518 and a p-value of 0.097, which exceeds the conventional significance level of 0.05. Therefore, Honey and Mumford learning style does not significantly moderate the relationship between teachers' professional development needs and their instructional competence. This means that whether a teacher is an Activist, Reflector, Theorist, or Pragmatist, the association between PD needs and classroom performance remains unchanged. The implication for Tangub City is that investing in learning-style inventories or differentiated PD tracks based on Honey and Mumford categories is unlikely to improve instructional competence. Instead, resources should focus on a unified, evidence-based PD program directly targeting the highest need area (e.g., Domain 1: Content Knowledge and Pedagogy). This null finding is consistent with meta-analyses by Pashler et al. (2008) and Willingham (2015), which concluded that matching

instruction to learning styles does not produce meaningful learning gains, and with a recent Philippine study (Espina, 2021) that found no significant moderating effect of learning preferences on teacher competence outcomes.

Table 8

Omnibus ANOVA Test for Differences in the Moderating Effect of Learning Styles Across Four Types (Activist, Reflector, Theorist, Pragmatist) on the PD Needs–Instructional Competence Relationship

	Sum of Squares	df	Mean Square	F	p
PD Need Mean	0.0556	1	0.0556	0.967	0.327
Dominant Learning Style	0.2320	3	0.0773	1.344	0.262
PD Need Mean * Dominant Learning Style	0.2066	3	0.0689	1.196	0.312
Residuals	11.0534	192	0.0576		

The Omnibus ANOVA test reveals that the interaction term (PD Need Mean $\times$ Dominant Learning Style) is not statistically significant ($F = 1.196$, $p = 0.312$), indicating that the moderating effect of learning styles on the relationship between PD needs and instructional competence does **not** differ significantly across the four Honey and Mumford types (Activist, Reflector, Theorist, Pragmatist). In other words, whether a teacher prefers one style over another, the influence of learning style on the PD needs–competence relationship remains statistically equivalent. The practical implication for Tangub City is that categorizing teachers by learning style for differentiated PD delivery is unwarranted; a unified, evidence-based program focused on high-priority domains (e.g., Content Knowledge and Pedagogy) is equally effective for all. This finding aligns with meta-analyses (Pashler et al., 2008; Willingham, 2015) that question the utility of learning styles in instructional design, and with a Philippine study (Espina, 2021) that found no significant interaction between learning preferences and teacher competence outcomes.

Table 9

Model Coefficients for Instructional Competence by Professional Development Needs and Dominant Honey and Mumford Learning Style

Predictor	Estimate	SE	t	p
Intercept ^a	5.50150	0.0477	115.2221	<.001
PD Need Mean	0.27512	0.2798	0.9832	0.327
Dominant Learning Style:				
Pragmatist – Reflector	0.20252	0.1100	1.8418	0.067
Theorist – Reflector	-0.00204	0.1045	-0.0195	0.984
Activist – Reflector	-0.11154	0.2068	-0.5393	0.590
PD Need Mean * Dominant Learning Style:				
PD Need Mean * (Pragmatist – Reflector)	-0.78694	0.4667	-1.6862	0.093

Table 9

Model Coefficients for Instructional Competence by Professional Development Needs and Dominant Honey and Mumford Learning Style

Predictor	Estimate	SE	t	p
PD Need Mean * (Theorist – Reflector)	-0.06689	0.4994	-0.1339	0.894
PD Need Mean * (Activist – Reflector)	0.74409	1.3521	0.5503	0.583

^a Represents reference level

The regression estimates suggest that the relationship between PD needs and instructional competence varies by learning style when using Reflector as the reference group. Reflectors benefit modestly from addressing their PD needs. On the other hand, higher PD needs among Pragmatists are associated with lower competence, suggesting that generic PD may backfire for them unless it is immediately practical and applicable. In addition, theorists respond similarly to Reflectors, perhaps benefiting from logical, structured input. Activists show the largest gain in competence when their PD needs are met, indicating they thrive on active, hands-on, and varied learning experiences.

Although the overall moderation was not statistically significant ($p = 0.312$ for the interaction in the ANOVA), the coefficients provide a rational basis for hypothesis-driven personalization that can be tested with a larger sample. The program should Assess each teacher’s dominant Honey-Mumford style (using the validated Learning Styles Questionnaire).

Table 10

Differentiate PD pathways for the four styles, especially for Activists and Pragmatists, because they show the most divergent slopes.

Learning Style	Recommended PD Design	Example Activities
Activist (high positive slope)	Experiential, fast-paced, collaborative, with immediate challenges	Role-play, teaching simulations, gamified micro-teaching, peer coaching, “unconference” sessions
Reflector (weak positive)	Observation-heavy, self-paced, time for analysis	Video lesson analysis, teaching journals, case study discussions, peer observation with structured reflection
Theorist (weak positive)	Logical, sequential, model-driven, evidence-based	Workshops on pedagogical theories, research-based frameworks (PPST), concept mapping, structured debates
Pragmatist (negative slope)	High caution – avoid generic theory. Focus on <i>ready-to-use, context-specific tools</i> with clear classroom transfer	“Try tomorrow” toolkits, lesson plan co-construction, just-in-time coaching, demonstration teaching with downloadable resources

Despite styles, Domain 1-Content Knowledge and Pedagogy had the highest PD need. All PD tracks must address it, but delivery differs by style. For Pragmatists; instead of traditional seminars, provide job-embedded coaching and curated online resource banks aligned to their grade level/subject. Avoid raising their “PD need” perception without immediate practical payoff. For Activists, implement action learning sets where they tackle real classroom problems and present solutions within a week. For Reflectors and Theorists,

offer blended learning with pre-session reading/observation and post-session guided reflection, plus access to research digests.

FINDINGS

The following findings are organized based on the order of the research questions, covering teachers' PD needs, instructional competence, learning styles, and the moderating effects of learning styles on the PD needs–competence relationship.

1. Teachers reported highest PD needs in Curriculum and Planning ($M = 3.86$, High Need) and Diversity of Learners ($M = 3.73$, High Need), while Personal Growth ($M = 1.82$, Low Need) and Community Linkages ($M = 2.24$, Low Need) were lowest. The Division must prioritize PD on curriculum design, lesson sequence, and differentiated instruction. The low need in personal growth suggests teachers feel self-sufficient, but this may mask compliance-driven under-reporting; triangulation with observation data is advised.

2. Teachers performed at Satisfactory–Applying to Very Satisfactory–Consolidating levels. Highest indicators: designing assessment strategies ($M = 5.55$) and managing classroom structure ($M = 5.51$). Lowest: content knowledge application (5.06) and higher-order thinking strategies (5.05). Minimum ratings as low as 3 (Developing) appeared in critical thinking, behavior management, and ICT use. While overall competence is solid, targeted coaching is needed for the subgroup of teachers with low outlier ratings, especially in HOTS and ICT. Raters should be calibrated to avoid compression at the “Applying” level and to identify genuine outstanding performance.

3. The dominant learning style is Theorist ($M = 3.91$), followed by Activist, Pragmatist, and Reflector (lowest). PD should be structured, logical, and theory-driven – providing models, research evidence, and clear agendas. However, since moderation analysis later showed learning styles do not significantly affect outcomes, heavy investment in style-matching is unnecessary.

4. There is no significant relationship ($r = 0.010$, $p = 0.890$). Self-reported PD gaps are independent of observed COT performance. Relying solely on teacher self-assessment for PD planning is ineffective. The Division must triangulate self-reports with student achievement data, peer observations, and calibrated COT results to identify genuine training needs.

5. Honey and Mumford learning style does not significantly moderate the PD needs–competence relationship (interaction $p = 0.097$). Creating separate PD tracks for Activists, Reflectors, Theorists, and Pragmatists is unlikely to improve instructional competence. Resources should be redirected to a unified, evidence-based PD program focused on high-priority domains.

6. There is no significant difference in the moderating effect across the four styles (ANOVA $p = 0.312$). Categorizing teachers by learning style and tailoring PD accordingly is not supported by the data. A single, well-designed PD program incorporating varied activities (reflective, active, theoretical, practical) can serve all teachers equally.

CONCLUSION

The study clearly shows that learning style-based personalization does not enhance the translation of PD needs into instructional competence. Therefore, the Division should abandon style inventories and differentiated tracks. Instead, invest in a unified PD program that directly addresses the highest needs – Curriculum and Planning and Diversity of Learners – delivered through a blended approach that includes demonstration teaching, structured reflection, and practical toolkits. Additionally, improve the accuracy of competence assessment by calibrating COT raters and supplementing student performance data.

Recommendations

Based on the findings and conclusions, the following recommendations are directed toward teachers, school heads, district supervisors, the Schools Division Superintendent, HR personnel, and future researchers to improve professional development and instructional competence in Tangub City.

For Teachers. Actively use multiple sources—COT feedback, peer observations, and student data—to identify genuine growth areas, especially in curriculum planning and differentiated instruction; participate in school-based LACs focused on these high-need domains, request coaching in low-rated indicators (HOTS, positive discipline, ICT), and engage fully in the unified PD program rather than expecting style-based tracks, as learning styles do not significantly moderate competence outcomes.

For School Heads. Calibrate COT ratings with colleagues to reduce leniency and the near-ceiling effect, prioritize LACs on Curriculum and Planning and Diversity of Learners (the two highest PD needs), provide structured coaching for teachers with minimum ratings of 3 (Developing) in critical thinking or behavior management, and avoid sorting teachers by Honey-Mumford learning styles, since the study found no significant moderation effect.

For District Supervisors. Develop a supplementary observation checklist that captures nuanced instructional practices in curriculum planning and differentiation, train school heads on triangulating COT results with self-reported needs and student achievement data, monitor LAC sessions to ensure they focus on Domain 4 and Domain 3 activities (e.g., co-planning, analyzing student work), and promote cross-school demonstration teaching on effective differentiation strategies.

For the Schools Division Superintendent. Reallocate PD funds away from learning-style inventories and differentiated style-based modules, mandate a unified division-wide PD program focused exclusively on Curriculum and Planning and Diversity of Learners delivered through blended, job-embedded formats (demonstration lessons, reflection, toolkits), institute multi-source evaluation of competence (student feedback, peer review, portfolio) to complement COT ratings, and support a longitudinal study on the program's impact on student learning.

For Human Resource Personnel (PD Designers). Stop designing separate PD tracks for Activist, Reflector, Theorist, and Pragmatist—the moderation analysis shows no significant interaction ($p = 0.097$; ANOVA $p = 0.312$); instead, develop a single, high-quality PD program that integrates theoretical input, case studies, hands-on workshops, and practical toolkits for all teachers, use pre-/post-training assessments of curriculum planning and differentiation skills, embed follow-on coaching, and evaluate whether the unified program improves low-outlier indicators (HOTS, ICT use, positive discipline).

For Future Researchers. Replicate the moderation analysis with a larger sample ($N > 300$) and a more sensitive measure of instructional competence (e.g., content-focused observation rubrics, student achievement gains) to confirm whether Honey and Mumford learning styles truly have no moderating effect; investigate specific PPST strands (e.g., Domain 1.3 on research-based teaching, Domain 4.2 on sequencing) rather than whole domains, as aggregated means may mask significant differences; use qualitative methods (case studies, stimulated recall interviews) to explore why Activists showed a descriptively stronger positive slope yet no statistical significance, and to understand Pragmatists' negative slope pattern; examine the impact of rater leniency on COT scores by comparing school head ratings with external observer ratings; and conduct a design-based research study piloting the recommended unified PD program focused on Curriculum and Planning and Diversity of Learners, measuring its effects on both teacher competence and student performance.

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Appendix A

Part 1: Demographic Profile

Name (Optional): _____ Position: _____

Sex at Birth: _____

Age

☐ 18-34 Years old

☐ 35- 54 Years old

☐ 55 Years old and above

Number of Years in Teaching:

☐ 0-2 years

☐ 6-10 years

☐ 16-20 years

☐ 31 up years

☐ 3- 5 years

☐ 11-15 years

☐ 21-30 years

Part II:

This questionnaire is designed to find out your preferred learning style(s). Over the years you have probably developed learning "habits" that help you benefit more from some experiences than from others. Since you are probably unaware of this, this questionnaire will help you pinpoint your learning preferences so that you are in a better position to select learning experiences that suit your style and having a greater understanding of those that suit the style of others. This is an internationally proven tool designed by Peter Honey and Alan Mumford. There is no time limit to this questionnaire. It will probably take you 10-15 minutes. The accuracy of the results depends on how honest you can be. There are no right or wrong answers.

5- Strongly Agree

3-Neutral

1- Strongly Disagree

4- Agree

2- Disagree

Learning Styles	Statement	1	2	3	4	5
Activists	I often act without considering the possible consequences					
	I believe that formal procedures and policies restrict people					
	I often find that actions based on feelings are as sound as those based on careful thought and analysis.					
	I actively seek out new experiences					
	I'm attracted more to novel, unusual ideas than to practical ones					
	I thrive on the challenge of tackling something new and different					
	I enjoy fun-loving, spontaneous people					
	I tend to be open about how I'm feeling					
	I prefer to respond to events on a spontaneous, flexible basis rather than plan things out in advance					
	Quiet, thoughtful people tend to make me feel uneasy					
	It is more important to enjoy the present moment than to think about the past or future					
	In discussions I usually produce lots of spontaneous ideas					
	More often than not, rules are there to be broken					
	On balance I talk more than I listen					
	I enjoy being the one that talks a lot					
	When things go wrong I am happy to shrug it off and "put it down to experience"					
	I find the formality of having specific objectives and plans stifling					
	I'm usually one of the people who puts life into a party					
Reflector	I quickly get bored with methodical, detailed work					
	I enjoy the drama and excitement of a crisis situation					
	I like the sort of work where I have time for thorough preparation and implementation					
	I take pride in doing a thorough job					
	I take care over the interpretation of data available to me and avoid jumping to conclusions					
	I like to reach a decision carefully after weighing up many alternatives					

	I pay meticulous attention to detail before coming to a conclusion					
	I am careful not to jump to conclusions too quickly					
	I prefer to have as many resources of information as possible - the more data to think over the better					
	I listen to other people's points of view before putting my own forward					
	In discussions I enjoy watching the manoeuvrings of the other participants					
	It worries me if I have to rush out a piece of work to meet a tight deadline					
	I often get irritated by people who want to rush things					
	I think that decisions based on a thorough analysis of all the information are sounder than those based on intuition					
	I prefer to stand back from a situation					
	I tend to discuss specific things with people rather than engaging in social discussion					
	If I have a report to write I tend to produce lots of drafts before settling on the final version					
	I like to ponder many alternatives before making up my mind					
	In discussions I'm more likely to adopt a "low profile" than to take the lead and do most of the talking					
	It's best to think carefully before taking action					
	On balance I do the listening rather than the talking					
	I'm always interested to find out what people think					
Theorist	I have strong beliefs about what is right and wrong, good and bad.					
	I tend to solve problems using a step-by-step approach					
	I regularly question people about their basic assumptions					
	I am keen on self discipline such as watching my diet, taking regular exercise, sticking to a fixed routine, etc.					
	I get on best with logical, analytical people and less well with spontaneous, "irrational"					
	I don't like disorganised things and prefer to fit things into a coherent pattern					
	I like to relate my actions to a general principle					
	I tend to have distant, rather formal relationships with people at work					
	I find it difficult to produce ideas on impulse					

	Flippant people who don't take things seriously enough usually irritate me					
	I tend to be a perfectionist					
	I can often see inconsistencies and weaknesses in other people's arguments					
	I believe that rational, logical thinking should win the day					
	I am keen to reach answers via a logical approach					
	In discussions with people I often find I am the most dispassionate and objective					
	I like to be able to relate current actions to a longer term bigger picture					
	I tend to be tough on people who find it difficult to adopt a logical approach					
	I am keen on exploring the basic assumptions, principles and theories underpinning things and events					
	I like meetings to be run on methodical lines, sticking to laid down agenda, etc.					
	I steer clear of subjective or ambiguous topics					
Pragmatist	I have a reputation for saying what I think, simply and directly					
	What matters most is whether something works in practice					
	When I hear about a new idea or approach I immediately start working out how to apply it in practice					
	I accept and stick to laid down procedures and policies so long as I regard them as an efficient way of getting the job done					
	In discussions I like to get straight to the point					
	I believe in coming to the point immediately					
	I believe in coming to the point immediately					
	I tend to be attracted to techniques such as network analysis, flow charts, branching programs, contingency planning, etc.					
	I tend to judge people's ideas on their practical merits					
	In meetings I put forward practical realistic ideas					
	I can often see better, more practical ways to get things done					
	I think written reports should be short and to the point					
	I like people who approach things realistically rather than theoretically					
	In discussions I get impatient with irrelevancies and digressions					

	I am keen to try things out to see if they work in practice					
	In discussions I often find I am the realist, keeping people to the point and avoiding wild speculations					
	I tend to reject wild, spontaneous ideas as being impractical					
	Most times I believe the end justifies the means					
	I don't mind hurting people's feelings so long as the job gets done					
	I do whatever is expedient to get the job done					
	People often find me insensitive to their feelings					