Predictor Of Multiple Intelligence In Educational Practice

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Article History	**Abstract**
Article Submission 10 March 2022 *Revised Submission* 18 April 2022 *Article Accepted* 29 June 2022	The goal of this study was to put each thinking style's predictions on multiple intelligences to the test. Participants are Medan City teachers who were randomly assigned to a sample (n=810) multiple intelligence scale from Gardner (1983) totalling 63 items with a range of 5 scales and a thinking style questionnaire using the Sternberg-Wagner Self-Assessment Inventor from Sternberg (2009) totalling 65 items with a range of 5 scale ranges. Only six of the eight intelligences, such as Interpersonal, Visual-spatial, Bodily-kinaesthetic, logical-mathematical, linguistic-verbal, musical-rhythmic, and harmonic, can be predicted using thinking styles, according to the findings. Meanwhile, in this study, no thinking style can predict intrapersonal or natural. The research findings explain specific thinking styles. **Keywords:** Predictor, Multiple Intelligence, Thinking Style, Intelligence.

Introduction

Multiple intelligences are frequently related to learning or are still in the field of education, but there are those who see it based on gender (Bowles, 2008; Furnham et al., 1999, 2002; Furnham & Shagabutdinova, 2012; Furnham & Ward, 2001; Loori, 2005) as well as quite a lot of research tendencies on multiple intelligences using a sample of teenage students (Alavinia & Farhady, 2012; Baş (Hearne & Stone, 1995; Rettig, 2005; Stevens, 2020). Multiple intelligence administration is carried out not only with empirical data approaches but also with qualitative ones (Ferreira & Jr., 2018; Garmen et al., 2019; Hilyana & Khotimah, 2021; McCoog, 2007; McLellan, 1994; Osciak & Milheim, 2001) and multiple intelligences are carried out not only with empirical data approaches but also with qualitative ones (Ferreira & Jr., 2018; Garmen et al (Acocella, 2021; Husnaini et al., 2021; Thambu et al., 2021)

Multiple intelligences are associated with writing skills (Ahmadian & Hosseini, 2012; Lunenburg & Lunenburg, 2014), language skills (Drakhshan & Faribi, 2015; Ghamrawi, 2014; Liu & Chen, 2013; Maftoon & Sarem, 2012), reading skills (McMahon et al., 2004), and creative

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thinking (McMahon et al., 2004). (Luthfiana et al., 2019) musical compositions (Wijayanti & Rukiyati, 2021) deepening tone (Helding, 2009, 2010) manner of communication (Judith, 2019) (Klein, 2003; Manner, 2001; Sener & Okçaliskan, 2018) academic excellence (Ekinci, 2014; Nard & Rani, 2018) strategies for learning (Eberle, 2011) individuality (Subia et al., 2022) theological (Karbono & Retnawati, 2021).

Logical-mathematical, Linguistic-verbal, Interpersonal, Intrapersonal, Visual-spatial, Bodily-kinesthetic, Musical-rhythmic and harmonic, and Naturalistic are the eight multiple intelligences (Gardner, 1983). Everyone has a dominant intelligence as a sign of individual differences. Even though teachers are teachers, research with students as participants is not comparable to that with teachers, but intelligence must be known in order to respect the knowledge of others, believe in the abilities of others, and be willing to share knowledge due to awareness of differences in intelligence (Martin, 2006).

The teacher plays an important role in ensuring that the learning and teaching process runs smoothly in the classroom, and it determines education in the short and long term for both participants and teachers. Multiple intelligences will influence how teachers teach and provide assessments to students in order for them to adapt their learning model, but teachers must consider how to organize a good class every day. Sternberg's (2009) thinking style theory consists of several components that distinguish each individual. This thinking style will also determine whether it is appropriate or not between students and teachers (L. Zhang, 2006), so the teacher's thinking style must be known so that they can combine multiple intelligences with their thinking style, or even adapt it to their own style. Consider the students in their classes. Intelligence is derived from complex thought processes and does not rely solely on genetic or environmental factors to explain. In this study, we ask questions such as RQ1: can each thinking style predict multiple intelligences?

RESEARCH METHOD

Sampling in this study was conducted in the city of Medan, North Sumatra province, Indonesia. the sample in this study were teachers who were actively teaching in the city of Medan taken randomly and the total number (n=810) and most of them were women (69%) and more than half of them did not live in the city of Medan (66%) where the experience of more than 25 years in teaching is less (16%) than the 3 levels of experience available

Table 1. *Sociodemographic participant*

Gender	Frequency	Percent
Men	245	30.247
Women	565	69.753
Education		
Bachelor	691	85.309
Master	119	14.691
Age		
24 . 36 Years old	281	34.691
37 . 48 Years old	327	40.370
> 49 Years old	202	24.938
Experience		
01 . 12 Years old	351	43.333
13 . 24 Years old	332	40.988
> 25 Years old	127	15.679

2.1   A variety of intelligences

The Multiple Intelligences questionnaire used in this study is based on Howard Gardner's Multiple Intelligences theory, which includes verbal/linguistic intelligence, logical/mathematical intelligence, visual-spatial intelligence, bodily-kinesthetic intelligence, musical intelligence/rhythmic intelligence, interpersonal intelligence, intrapersonal intelligence, and

naturalistic intelligence (Gardner, 1983, 1993). The instrument has response responses ranging from 1 to 5 on a scale of 1 = "strongly disagree" to 5 = "strongly agree," with a total of 63 questions.

2.2 Style of thinking

The Sternberg-Wagner Self-Assessment Inventor from (Sternberg, 2009) is used for the thinking style questionnaire, which consists of functions, forms, levels, scope, and learning of thinking styles, and each of these sections consists of several explanations, such as the function of multiple intelligences consisting of styles. legislative, executive, and judicial. Meanwhile, the styles include monarchy, hierarchy, oligarchy, and anarchy. Then there are global and local levels. The scope is divided into internal and external components. While the leaning is split between liberals and conservatives. Responses range from 1 (extremely dissatisfied) to 5 (extremely suitable). There are 65 items on the questionnaire.

The Medan Area University's psychology faculty has recommended that this study follow procedures. This study employs a questionnaire that is collected through a combination of online and offline methods, depending on the field situation that is supported by the research. Before collecting data, we voluntarily obtained consent from each participant, which was then followed by sociodemographic data such as gender, education level, age, teaching experience, and place of residence. Following that, data on teaching styles and multiple intelligences is presented.

2.3 Data examination

Previous research has found that age, gender, and experience can all influence one's thinking style (Sternberg & Grigorenko, 1995; L.-F. Zhang, 1999). In this study, differences in thinking styles and multiple intelligences will be carried out based on several sociodemographic, which will then be followed by looking at the correlation, and then the strong correlation between thinking styles and multiple intelligences will be followed by looking at the predictions of thinking styles on multiple intelligences based on the fulfillment of Shapiro Wilk's assumption of normalcy. The JASP program was used exclusively for the analysis in this study.

RESULT AND ANALYSIS

3.1 Finding

Overall description analysis reveals that the dominant thinking style of teachers is in the executive function section (84.4 percent) with men (n=199) and women (n=485) and 17 teachers missing, hierarchical form (71.2 percent) with men (n =167) and women (n=410) and 17 teachers missing, local level (64.8 percent) with men (n=164) and women (n=356) and 16 teachers missing, internal scope (73 percent) with men (n =167) and women (n=425) Meanwhile, intrapersonal multiple intelligence (25.1 percent) with men (n=51) and women (n=153), followed by logic-mathematics (26.7 percent) with men (n=66) and women (n=151), and 32 teachers reported missing, dominate the intelligence of teachers in Medan City.

Each component of the thinking style has a significant relationship (p 0.001), but the legislative and internal relationship has the lowest relationship (r = 154, rho = 179). Meanwhile, each relationship was significant (p0.001) for multiple intelligences, with the lowest magnitude being intrapersonal and musical-rhythmic and harmonic (r=306, rho=310). Then, in the musical-rhythmic, harmonic, and global relationships, the relationship of each thinking style with multiple intelligences was significant (p0.001) with a magnitude (r=168, rho=136).

Interpersonal with global (w=0.997, p=0.159), visual-spatial with oligarchic (w=0.997, p=0.080), bodily-kinesthetic with local (w=0.998, p=0.444), logical-mathematical with monarchic (w=0.997, p=0.214) and oligarchic (w=0.997, p=0.188), linguistic-verbal with monarchic (w=0.996,

Table 2. *the results of the regression data*

model	R^2	F	p
Interpersonal*global	0.085	75.151	<0.001
Visual-spatial*oligarchic	0.156	149.599	<0.001
Bodily-kinesthetic*local	0.109	99.348	<0.001
logical-mathematical*monarchic-oligarchic[1]	0.117	53.332	<0.001

linguistic-verbal*monarchic-oligarchic[1]	0.132	61.318	<0.001
musical-rhythmic and harmonic*oligarchic-external-conservative[1]	0.088	25.834	<0.001

Note: 1 is a multiple regression analysis with assumptions that have been met in the supplementary data

The normality assumption that has been met will be followed by linear regression or multiple regression. Multiple intelligences such as interpersonal, visual-spatial, bodily-kinesthetic, logical-mathematical, linguistic-verbal and musical-rhythmic and harmonic can predict teachers' thinking styles on a global, local level, with monarchic, oligarchic, external scope and leaning conservative forms.

3.2   Analysis

The global thinking style that interpersonal intelligence can predict has stable characteristics in mood, emotion, temperament, motivation, and sensitivity to the ability of others to work together as part of a group. This is a common trait of interpersonal intelligence that we can see in everyday life. They may have a large number of friends and diverse relationships, so it is appropriate for someone with a global level thinking style to provide and predict interpersonal skills in someone. Teachers with a global thinking style are statistically capable of having interpersonal intelligence, albeit at a low level. Global thinking benefits teachers in the educational process because it allows them to think about or see the big picture of something.

This ability is similar to the eye-mind connection, which can describe and calculate a view and shape of space or buildings. Oligarchs enjoy tasks, projects, and situations that allow them to work in a competitive environment where all aspects and goals are equally important. This person, like a hierarchy-minded person, likes to get things done in a specific time frame, but it's difficult to prioritize when to get them done. As a result, oligarchic-minded people adapt well when competing demands have the same priority, but struggle more when they have different priorities. Because oligarchs can predict teachers' visual abilities, teachers with this thinking style will do more simulations involving visuals, space, and buildings.

While bodily-kinesthetic intelligence is their primary ability in their physical, they will feel at ease when performing tasks involving body movement. Local-level thinking styles can statistically predict this intelligence, as we can see in our daily lives. People with a local thinking style work in great detail, preferring to be specific, and are more likely to succeed at work when given specific or clear examples. Teachers with this thinking style are likely to have strong physical abilities because they are constantly working with physical movements. If there is a teacher who has this ability, he should be a sports teacher; however, not all teachers should be like this.

Looking at the next step, there is logical-mathematical intelligence, which is someone who is rational and critical and has good logic skills. Teachers with this skill will be at ease in natural science disciplines as well as exact sciences. It should be noted, however, that the combination of thinking styles with monarchy and oligarchy forms can predict this intelligence statistically. The previous oligarchic thinking style can predict visual-spatial, whereas the hierarchy is more systematic and demonstrates process perfection. The oligarchic thinking style, in conjunction with the hierarchy, can now predict logical-mathematical. A person with an oligarchy and hierarchy is also expected to be rational and critical of something. The dominant teacher with this thinking style will be more systematic and critical, and rational will be the foundation for classroom instruction.

Furthermore, the type of oligarchy and hierarchy can predict not only rational and critical abilities, but also verbal-linguistic intelligence. This ability has strong language and speech abilities, as well as the ability to read and write. A thinking style that tends to do a lot of things at once or wants to think about a lot of things at once has the potential to be good with language and words.

Meanwhile, someone who is dominant in the oligarchic form with an external scope and a conservative inclination can predict musical-rhythmic and harmonic intelligence. This intelligence is aware of sound, rhythm, and tone. People with musical intelligence can usually sing, play musical instruments, and compose music with good or perfect pitch. They can detect rhythm, pitch, meter, pitch, melody, and timbre. The combination of oligarchs who think about many

things at once and work with others externally, focus on what is outside of themselves and rely on each other, while leaning conservative is doing things in a way that has been proven and clearly seen by themselves and has a tendency to follow tradition. This set of thinking styles can forecast a person's ability to hear and tone in general.

CONCLUSIONS

Only six of the eight intelligences, such as Interpersonal, Visual-spatial, Bodily-kinesthetic, logical-mathematical, linguistic-verbal, musical-rhythmic, and harmonic, can be predicted using thinking styles. Meanwhile, in this study, no thinking style can predict intrapersonal or natural. Thinking styles, like the multiple intelligences that every human being possesses, have various functions, forms, levels, scopes, and learnings. Teachers, as the frontline of education, need to know more about each teacher's thinking style and intelligence in order to tailor his teaching to the study he is teaching. Although Indonesia as a whole still lacks teachers, it is necessary to re-examine related thinking styles and intelligence through other methods or analyses in order for a set of prediction results to provide an insight into the world of education, especially teachers, so that teaching and education can be more developed through this study.

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