

# Multiple Intelligences and 21<sup>st</sup> Century Competencies of Social Science Teachers: Input to Continuing Instructional Development Program

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DOI: <https://doi.org/10.47772/IJRISS.2026.1026EDU0337>

Received: 18 May 2026; Accepted: 23 May 2026; Published: 16 June 2026

## ABSTRACT

This study employed a mixed-methods sequential explanatory research design to investigate the Multiple Intelligences and 21st-Century Competencies of Social Science teachers at Capiz State University (CAPSU), serving as the foundational baseline for a Continuing Instructional Program. The investigation was carried out in two distinct, sequential phases. In the initial quantitative phase, a complete enumeration was utilized to survey 35 Social Science teachers across various colleges at the CAPSU–Main Campus during the academic year 2021–2022, including faculty from the College of Education (n=7), College of Management (n=6), College of Engineering and Architecture (n=5), and the Bachelor of Industrial Technology program (n=17). Data were gathered using a researcher-made, 108-item Multiple Intelligences Survey (alpha =.924) and a modified 36-item 21st Century Competencies Questionnaire adapted from Ravitz (2014) (alpha =.963). Quantitative data was computer-processed via SPSS using mean, standard deviation, and Pearson Correlation set at a .05 alpha level of significance. To explain and deepen these statistical trends, the second, qualitative phase gathered deeper experiential data through a Focus Group Discussion (FGD) with 8 Social Science teachers from across the wider CAPSU System. The integrated findings revealed that the overall level of Multiple Intelligences among the teachers was high (M = 3.94, SD = 0.35), with Existential Intelligence emerging as the highest domain, interpreted as very high (M = 4.37, SD = 0.35), followed by Naturalist Intelligence perceived as high (M = 4.09, SD = 0.47). Similarly, the teachers' overall level of 21st-Century Competencies was high (M = 4.20, SD = 0.59), with Collaboration (M = 4.23, SD = 0.52) and Creativity (M = 4.22, SD = 0.67) marked as very high. Inferential analysis demonstrated a significant positive relationship between the two variables ( $r = .343$ ,  $p = 0.038$ ), indicating that cognitive diversity serves as a vital foundation for professional skill. The qualitative data validated and contextualized these metrics; FGD participants explained that the inherent values-centric and societal focus of the Social Science discipline naturally fosters existential and naturalist traits. Furthermore, teachers actively cross-mapped their intelligence to the "4Cs," using interpersonal and linguistic domains to drive classroom collaboration and creativity, while relying on existential and logical strengths to anchor critical thinking during discussions of complex contemporary issues. However, the qualitative narratives also exposed systemic challenges, including heavy workloads and resource limitations that threaten sustained teaching innovation. In response to these combined statistical strengths and qualitative impediments, a data-driven Continuing Instructional Program was developed. The proposed program features targeted professional growth interventions, specifically: (1) Personality and Mental Health Webinars, (2) Curriculum Mapping, (3) Teaching and Learning Class Workshops focusing on Multiple Intelligences Integration, and (4) Educational Excursions, all designed to sustain instructional effectiveness and promote holistic teacher development.

**Keywords:** Mixed-Methods Sequential Explanatory, Multiple Intelligences, 21st-Century Competencies, Social Science Teachers, Continuing Instructional Program

## INTRODUCTION

The rapid transformation of education brought about by the COVID-19 pandemic significantly changed teaching and learning processes worldwide. In the Philippines, the implementation of distance and flexible learning

modalities challenged teachers to adapt quickly to new educational approaches and technologies. Teachers were expected to maintain instructional quality despite limitations in face-to-face interaction, making innovation and adaptability essential in the educational process (Rodriguez, 2021). The pandemic also emphasized the importance of teachers' competencies and their ability to respond effectively to diverse learner needs in virtual and flexible learning environments (Arnold & Fonseca, 2014).

In the context of modern education, teachers are no longer viewed solely as providers of information but also as facilitators of meaningful learning experiences. Effective teaching requires educators to recognize individual differences among learners and apply varied instructional strategies that support students' learning styles and abilities. One educational framework that addresses learner diversity is Howard Gardner's Theory of Multiple Intelligences. Gardner proposed that intelligence is multidimensional and includes linguistic, logical-mathematical, interpersonal, intrapersonal, spatial, bodily-kinesthetic, musical, naturalist, and existential intelligences (Gardner, 1983). The theory encourages teachers to integrate varied learning activities that foster creativity, participation, collaboration, and critical thinking among students (Burdett et al., 2017).

Research indicates that the application of Multiple Intelligences in teaching enhances students' academic performance, motivation, comprehension, and cooperative learning skills (Cheng et al., 2021). It also enables educators to create learner-centered and inclusive classrooms that accommodate diverse abilities and interests. In both traditional and online learning settings, integrating multiple intelligence through collaborative activities, multimedia presentations, role-playing, and problem-solving tasks can enrich the learning experience and improve student engagement (Parry, 2020). Consequently, teachers who effectively utilize multiple intelligences are more capable of facilitating meaningful and interactive learning experiences.

Alongside Multiple Intelligences, teachers are likewise expected to possess strong 21st century competencies to address the demands of contemporary education. These competencies include creativity, collaboration, communication, and critical thinking, commonly known as the 4Cs (Stauffer, 2021; Zimmerman, 2018). Such competencies are essential in preparing students to become productive, innovative, and globally competitive individuals. Teachers who demonstrate these competencies are better equipped to integrate technology, encourage active learning, and foster independent and collaborative learning among students (Gagliano, 2021; Leonard, 2016). Hence, understanding the relationship between Multiple Intelligences and 21st century competencies may provide valuable insights into improving instructional practices and teacher development.

This study aimed to determine the level of Multiple Intelligences and 21st century competencies of Social Science teachers in Capiz State University during the Academic Year 2021–2022. Specifically, it sought to : (1) determine the level of Multiple Intelligences among Social Science teachers; (2) identify the level of their 21st-century competencies; (3) determine whether a significant relationship exists between Multiple Intelligences and 21st-century competencies; (4) identify, through a Focus Group Discussion, the experiences and perspectives of Social Science teachers regarding the relationship of Multiple Intelligences and 21st-century competencies in enhancing instructional effectiveness; and (5) propose a Continuing Instructional Development Program based on the findings of the study. The study was anchored on Howard Gardner's Theory of Multiple Intelligences and the principles of 21st century education, which emphasize the development of innovative, adaptive, and learner-centered teaching practices

## **METHODS**

### **Research Design**

This study employed a sequential explanatory mixed-methods research design to examine the relationship between Multiple Intelligences and 21st-century competencies among Social Science teachers and to gain a deeper understanding of the factors influencing these relationships. In the first phase, a quantitative survey-correlational approach was used to collect and analyze data on variables that cannot be directly observed, enabling the researcher to statistically describe existing conditions and determine the relationship between the variables (Gay et al., 2011). This was followed by a qualitative phase utilizing semi-structured interviews and a Focus Group Discussion (FGD) to further explain, validate, and enrich the quantitative findings. The qualitative

component provided deeper insights into how Social Science teachers demonstrate and apply Multiple Intelligences and 21st-century competencies in their instructional practices, thereby offering a more comprehensive understanding of the results (Creswell, 2018).

### **Participants**

This study employed a two-phase sampling approach. For the quantitative phase, a complete enumeration of thirty-five (35) Social Science teachers from Capiz State University (Main Campus) was utilized to assess levels of Multiple Intelligences and 21st Century Competencies. To enhance the depth of the findings and address the limitations of self-reported data, a qualitative phase was added involving a purposive sample of eight (8) Social Science teachers from the same institution for a Focus Group Discussion (FGD). These participants were selected based on their years of teaching experience and willingness to provide detailed insights into the practical application of Multiple Intelligences in the classroom. This integration of a qualitative sub-sample allows for the triangulation of data, ensuring the credibility and richness of the research results.

### **Instruments**

Two primary quantitative instruments, supplemented by a qualitative protocol, were utilized to gather the data needed for the study.

The Multiple Intelligences Survey was a researcher-made 108-item questionnaire designed to assess the level of Multiple Intelligences among Social Science teachers across nine domains: linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, intrapersonal, interpersonal, naturalist, and existential intelligences. Each domain consisted of 12 statements describing the respondents' understanding and experiences related to each intelligence. The 108-item survey was developed by mapping twelve (12) specific behavioral indicators to each of Gardner's nine domains of intelligence. To ensure content validity, the instrument was reviewed by a panel of experts in Psychology and Social Science Education who evaluated the items for clarity, theoretical alignment, and cultural relevance to the Philippine educational context. It was then pilot tested among 30 teachers who were not participants of the study. The high Cronbach's Alpha of .924 confirms that the items within each domain consistently measure the intended cognitive traits with excellent internal consistency.

The 21st Century Competencies Questionnaire, modified from Ravitz (2014), was a 36-item instrument used to determine the level of 21st-century competencies of Social Science teachers. The questionnaire measured four competency areas namely: critical thinking, collaboration, communication, and creativity, with each domain consisting of nine statements assessing the respondents' activities and practices related to each competency. The instrument likewise underwent face and content validation and pilot testing among 30 teachers who were not included in the study to ensure validity and reliability. Reliability testing using SPSS produced a Cronbach's Alpha reliability index of .963, indicating excellent reliability of the instrument.

To complement these quantitative instruments in line with the sequential explanatory design, an FGD Interview Guide was developed by the researcher. This semi-structured guide focused on open-ended questions designed to prompt teachers to explain their experiences, instructional philosophies, and classroom practices related to Existential and Naturalist intelligences.

### **Data Analysis**

The data analysis for this study followed a sequential structure, processing the quantitative data first to inform the subsequent qualitative analysis.

For the quantitative phase, descriptive statistics, specifically the mean and standard deviation, were utilized to determine the level of Multiple Intelligences and 21st-century competencies of Social Science teachers. The mean was used to identify the average responses of the participants, while the standard deviation determined the homogeneity or heterogeneity of their scores. Pearson Correlation (Pearson  $r$ ), set at a 0.05 level of significance, was employed to determine the significant relationship between Multiple Intelligences and 21st-century

competencies. All quantitative data were computer-processed using the Statistical Package for the Social Sciences (SPSS). For the qualitative phase, thematic analysis was applied to the transcripts of the Focus Group Discussion. The data were coded and categorized into themes to explain, enrich, and contextualize the high quantitative scores found in the Existential and Naturalist intelligence domains. Finally, the quantitative and qualitative findings were integrated during the discussion phase to provide a comprehensive interpretation of the data.

## RESULTS

The findings of the study revealed that Social Science teachers at Capiz State University–Main Campus demonstrated a generally high level of Multiple Intelligences and 21st century competencies (see Tables 1 and 2). The overall level of Multiple Intelligences was found to be high, indicating that the teachers possessed strong skills and abilities in understanding and utilizing various forms of intelligence in the teaching and learning process. Among the nine domains, Existential Intelligence obtained the highest mean and was described as very high, suggesting that teachers possessed deep awareness of moral beliefs, life values, and human existence. Naturalist and Spatial intelligence were likewise rated high, reflecting teachers’ ability to utilize environmental awareness and visual-spatial skills in instruction. The remaining domains, namely Intra-personal, Linguistic, Musical, Bodily-Kinesthetic, Inter-personal, and Logical-Mathematical intelligences, were also interpreted as high, implying that teachers could integrate diverse teaching strategies and learning activities suited to students’ varied abilities and learning preferences. It supports Gardner’s (1983) Theory of Multiple Intelligences, which explains that intelligence is multidimensional and can influence teachers’ instructional practices and learning facilitation. The high level of Multiple Intelligences among Social Science teachers indicates their ability to apply varied teaching strategies that address students’ diverse learning styles and abilities. This finding is consistent with Cheng et al. (2021), who stated that the application of Multiple Intelligences enhances engagement, motivation, and effective learning experiences.

Table 1. Mean and Standard Deviation of Multiple Intelligences

Variable	Mean	Description	SD
Multiple Intelligences	3.94	High	0.35
Existential	4.37	Very High	0.35
Naturalist	4.09	High	0.47
Spatial	4.06	High	0.39
Intra-personal	3.89	High	0.53
Linguistic	3.85	High	0.39
Musical	3.83	High	0.62
Bodily-Kinesthetic	3.82	High	0.57
Inter-personal	3.82	High	0.48
Logical-Mathematical	3.77	High	0.48

Similarly, the findings showed that the Social Science teachers exhibited a high level of 21st-century competencies (see Table 2). Collaboration and Creativity were rated very high, while Critical Thinking and Communication were interpreted as high. These results indicate that the teachers could utilize the 4Cs - critical thinking, collaboration, communication, and creativity in their instructional practices. The findings further imply that teachers were adaptable, innovative, and collaborative in facilitating learning activities both in face-to-face and flexible learning environments. Similarly, the high level of 21st-century competencies supports the ideas of Stauffer (2021) and Zimmerman (2018), who identified communication, collaboration, creativity, and critical thinking as essential competencies in modern education. The significant relationship between Multiple Intelligences and 21st-century competencies further suggests that teachers with stronger intelligences also tend to demonstrate greater effectiveness in collaboration, communication, creativity, and critical thinking within the teaching and learning process.

Table 2. Mean and Standard Deviation of 21st Century Competencies

Variable	Mean	Description	SD
21st Century Competencies	4.20	High	0.59
Collaboration	4.23	Very High	0.52
Creativity	4.22	Very High	0.67
Critical Thinking	4.19	High	0.55
Communication	4.16	High	0.63

Further analysis revealed a significant positive relationship between Multiple Intelligences and 21st century competencies among Social Science teachers (see Table 3). The significant relationship ( $r = .343$ ) between Multiple Intelligences and 21st Century Competencies aligns with the view that cognitive diversity is a foundation for professional skill. For instance, the 'Very High' level of Existential Intelligence ( $M=4.37$ ) suggests that these teachers possess a deep awareness of moral and life values, which theoretically bolsters their capacity for Critical Thinking and Communication when facilitating complex social issues. This supports the integration of Gardner’s framework into professional development to enhance the '4Cs'

Table 3. Pearson r on the Relationship Between Multiple Intelligences and 21st Century Competencies

Variables	r	Sig.
Multiple Intelligences and 21st Century Competencies	.343*	0.038

\* $p < 0.05$  significant at 5% alpha level

The high levels of Multiple Intelligences and 21st-century competencies among Social Science teachers, as well as the significant relationship between the two variables, served as the basis for developing the Continuing Instructional Program. The findings indicate that strengthening teachers’ intelligence and competencies may further improve their instructional effectiveness, adaptability, and learner-centered teaching practices. Since teachers demonstrated strengths in the nine domains of Multiple Intelligences and the 4Cs of 21st-century skills communication, collaboration, critical thinking, and creativity, the proposed programs were designed to sustain and further enhance these competencies.

### Qualitative Findings from the Focus Group Discussion

To further enrich and validate the quantitative findings, a Focus Group Discussion (FGD) was conducted among eight Social Science teachers from the Capiz State University (CAPSU) System in Roxas City. Through thematic analysis of the participants’ responses, several themes emerged that supported the statistical results regarding Multiple Intelligences and 21st-century competencies.

The participants generally perceived Multiple Intelligences as essential in addressing the diverse learning needs, interests, and abilities of students. Teachers emphasized that understanding various intelligences enabled them to design more engaging and learner-centered classroom activities. One participant explained that “students learn differently, so teachers must also vary strategies to make learning meaningful.” Most participants agreed that Social Science teachers in the CAPSU System possess high levels of Multiple Intelligences because of their exposure to varied teaching experiences, collaborative activities, and flexible learning environments. Existential intelligence was commonly associated with the nature of Social Science subjects, as teachers often deal with issues related to values formation, morality, culture, and human existence. As one teacher shared, “Social Science teaching is not only about facts; it also involves understanding life, society, and human values.” Participants also described linguistic and interpersonal intelligences as highly evident among teachers since communication and interaction are central components of classroom instruction. However, some teachers admitted that certain domains such as musical and bodily-kinesthetic intelligence were less frequently utilized in Social Science

instruction due to the academic nature of the subject. Despite this, participants recognized the importance of integrating different intelligences to make lessons more interactive and inclusive.

In terms of 21st-century competencies, teachers viewed communication, collaboration, creativity, and critical thinking as highly important skills necessary for effective teaching in the modern educational environment. Communication was considered vital in delivering lessons clearly and building positive relationships with learners. Collaboration emerged as a significant competency because teachers often work with colleagues in planning lessons, conducting activities, and addressing student concerns. One participant stated that “teaching today requires teamwork because teachers cannot work alone anymore.” Creativity was likewise emphasized as necessary in developing innovative instructional materials and adapting lessons to students’ needs, especially in flexible and technology-assisted learning settings. Critical thinking was also recognized as an essential competency among Social Science teachers because the discipline requires analysis of societal issues, historical events, and contemporary concerns. Participants explained that teachers are expected to guide students in analyzing information critically and forming informed opinions. However, some participants noted that maintaining creativity and critical thinking can sometimes be challenging due to workload, time constraints, and limited instructional resources.

Regarding the relationship between Multiple Intelligences and 21st-century competencies, participants generally agreed that teachers who possess stronger intelligences also tend to demonstrate higher competencies in communication, collaboration, creativity, and critical thinking. One teacher explained that “when teachers understand their strengths and intelligences, they become more confident and effective in handling students and classroom situations.” Another participant added that interpersonal and linguistic intelligences greatly contribute to effective communication and collaboration, while existential and logical intelligences help strengthen critical thinking and decision-making in teaching practices.

Overall, the FGD findings revealed that Multiple Intelligences and 21st-century competencies are interconnected and mutually supportive in enhancing instructional effectiveness among Social Science teachers in the CAPSU System. The participants emphasized that continuous professional development programs, workshops, and training activities are necessary to further strengthen these competencies and intelligences. These qualitative insights supported the quantitative findings which indicated high levels of Multiple Intelligences and 21st-century competencies, as well as a significant positive relationship between the two variables. Furthermore, the findings served as the basis for the proposed Continuing Instructional Program such as Personality and Mental Health Webinars, Curriculum Mapping, Teaching and Learning Workshops on Multiple Intelligences Integration, and Educational Excursions were proposed to support teachers’ professional growth and holistic development in the 21st-century educational setting.

## DISCUSSION

The integrated findings from this sequential explanatory mixed-methods study suggest that Social Science teachers demonstrate high levels of Multiple Intelligences ( $M = 3.94$ ) and 21st-century competencies ( $M = 4.20$ ), indicating strong readiness for modern, learner-centered instruction.

The initial quantitative phase, which surveyed 35 Social Science teachers from the CAPSU Main Campus, highlighted Existential Intelligence ( $M = 4.37$ , Very High) and Naturalist Intelligence ( $M = 4.09$ , High) as primary cognitive strengths. The subsequent qualitative phase, involving a Focus Group Discussion (FGD) with 8 Social Science teachers from across the CAPSU System, directly explained these high metrics. The FGD participants illuminated how the Social Science discipline naturally intertwines with values formation, morality, and human existence, noting that “*Social Science teaching is not only about facts; it also involves understanding life, society, and human values.*” This system-wide narrative effectively clarifies why existential traits scored the highest quantitatively among the Main Campus faculty.

Furthermore, the significant positive relationship discovered between the two variables ( $r = .343$ ,  $p = 0.038$ ) suggests that teachers with higher intelligence also tend to demonstrate stronger professional skills. The 8 FGD participants contextualized this statistical link by explaining how specific domains actively drive the “4Cs” in

the classroom. For instance, teachers leverage their interpersonal and linguistic intelligence to excel in Collaboration (M = 4.23, Very High) and Creativity (M = 4.22, Very High), while drawing on their existential and logical-mathematical strengths to anchor Critical Thinking (M = 4.19) when analyzing complex societal issues.

These integrated findings support Gardner's (1983) Multiple Intelligences Theory and align with Trilling and Fadel's (2009) 21st-century skills framework, emphasizing that diverse cognitive strengths enhance teaching effectiveness. They also reflect Dede's (2010) view that adaptive teacher capacities contribute to flexible and student-centered instruction.

While the data emphasizes the excellence of these educators, the qualitative FGD simultaneously exposed systemic challenges such as heavy workloads and resource constraints that threaten sustained creativity and critical thinking. In direct response to both the statistical strengths and these qualitative concerns, the proposed Continuing Instructional Development Program offers targeted training activities such as Personality and Mental Health Webinars, Curriculum Mapping, and MI Workshops aimed at enhancing long-term instructional effectiveness and supporting the teachers' holistic professional growth.

### Conflict Of Interest

The author declares that there is no conflict of interest regarding the publication of this study. No financial, personal, institutional, or professional relationships influenced the design, conduct, analysis, or reporting of the research findings.

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