Philippine Education Research Journal

The official research publication of the Private Education Assistance Committee · December 2019, vol. 2019, no. 1

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Philippine Education Research Journal
Enriching the discussion.
Improving Philippine education.

December 2019, volume 2019, number 1, pages 1–2
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Editorial policies and procedures

Focus and scope

The Philippine Education Research Journal (PERJ) is an online, peer-reviewed, open access journal that is the official research publication of the Private Education Assistance Committee (PEAC). Published twice a year, it serves as a platform for the dissemination of research of interest to decision-makers, policy-makers, and educational leaders and practitioners. Its focus is on Philippine education.

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Each item in the PERJ belongs to exactly one of the following sections.

Editorial A short item expressing an editor's views. It is not peer-reviewed, does not require an abstract, and is not included in the indexing of the journal. Only editorial board members may submit it. There is a maximum of 2,000 words for its body text. Its title and the names of its authors are included in the table of contents.

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Philippine Education Research Journal
Enriching the discussion.
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December 2019, volume 2019, number 1, pages 3–11
Refereed Article

College teachers' awareness of and pedagogic practices for 21st century skills

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Abstract
This study found differences in the level of awareness of and extent of pedagogic practices for enhancing 21st century skills among college faculty members coming from different curriculum strands. This descriptive-comparative research involved 180 teachers in one university who responded to a questionnaire. Means, analyses of variance at a .05 significance level, and post hoc analyses using the Scheffé test were used. To validate results from the responses, interviews with college deans and department heads were conducted. The results show a high level of awareness of learning and innovation skills, life and career skills, and information, media, and technology skills. The level of awareness varied significantly when respondents were grouped according to curriculum strands, where some groups were significantly higher and one group was significantly lower. For pedagogic practices, inquiry-based learning was practiced to a very great extent while collaborative learning, project-based learning, and reciprocal teaching were practiced to a great extent. The extent of pedagogic practices varied significantly when respondents were grouped according to curriculum strands, where one or more groups implement the pedagogic practices to a greater extent than the others.

Keywords
21st century skills, awareness, pedagogic practices, curriculum strands

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Introduction

The existentialism philosophy of education promotes the belief that individuals have no fixed nature and shape their being as they live. Duka (2006) presents the existentialist as somebody who should enable individuals to make choices for their lives; education should be a means to open their very eyes to the naked truth of their existence and be aware of their status quo and, in so doing, it serves as a guiding spirit for them in making prudent decisions and wise actions. He further believes that teachers have the right to teach their students how to think but not what to think.

Ornstein, Levine, Gutek, and Vocke (2011) present educators adhering to the philosophy of progressivism as facilitators of learning motivating direct experience and believing that the school should be a laboratory for experimentation. They state that progressive educators oppose authoritarian teachers, exclusively book-based instruction, and passive learning.

It is believed that the most flexible and adaptive professionals are teachers. Learners, from generation to generation, change. More learning needs are challenging, so that teachers must thrive. There is a great need to shift from the traditional way of teaching to a more appropriate way that is aligned to a better way of how students learn, directing them to becoming lifelong learners; improving their talents and abilities in every way to prepare them to become part of the global village.

Bilbao, Corpuz, Llagas, and Salandanan (2015) state that to become a global teacher, one should be equipped with a wider range of knowledge of the various educational systems outside the country. In this era, the life of a teacher is not only confined inside the classroom. The teacher, who is essentially a consumer of information, must be knowledgeable about concepts and events that affect education.

Lozano (2014) did an assessment on the integration of 21st century skills in the Philippine Military Academy curriculum and found out that all 21st century skills except information, media, and technology skills, are highly integrated in the Philippine Military Academy curriculum.

Caseldo's (2014) study on competence and employability skills of teacher education students found out that the overall level of employability skills of the students was high. However, he recommends the improvement and emphasis of active learning where students "learn how to learn."

With the intention to help improve the quality of higher education, this study aimed to find out college teachers' level of awareness of and extent of pedagogic practices

for enhancing 21st century skills of learners who shall sooner or later exemplify world class productivity in their field of specialization. As the saying goes, "Knowledge is power." Awareness here refers to pedagogic knowledge while pedagogic practices refers to the effective application of pedagogic knowledge. It is believed that teachers' pedagogic knowledge and pedagogic practices empower teachers in preparing the learners to be global citizens.

The world is changing very fast. Stewart (as cited in Jacobs, 2010) states that the world in which today's students will graduate is fundamentally different from the world in which people in the past grew up. She says that the quickening pace of globalization over the past 20 years—driven by profound technological changes, the rise of China and India, and the accelerating pace of scientific discovery—has produced a whole new world. She states, "Companies manufacture goods around the clock and around the world; ideas and events traverse the internet in seconds. . . " (p. 97)

Facing the 21st century is an enormous challenge to colleges and universities. They are expected to train professionals who can be able to integrate themselves into the global arena. Zulueta and Maglaya (2004) believe that the higher education sector must move ahead faster than the rest. They cannot afford to be merely reactionaries in a field that is highly competitive. They further believe that the demand is for Filipinos to have quality and accessible higher education that will produce a people with a thirst for scholarship and world-class productivity.

21st century skills

According to Great Schools Partnership (2016), "[t]he term *21st century skills* refers to a broad set of knowledge, skills, work habits, and character traits that are believed—by educators, school reformers, college professors, employers, and others—to be critically important to success in today's world, particularly in collegiate programs and contemporary careers and workplaces."

Partnership for 21st Century Skills (2015) presents three core skills (and eleven subskills): learning and innovation skills (critical thinking and problem solving, creativity and innovation, communication and collaboration), life and career skills (flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility), and information, media, and technology skills (information literacy, media literacy, information, communications, and technology (ICT) literacy). (See also Partnership for 21st Century Learning (2019).)

Pedagogic practices

It is a must to provide significant human experiences to students so that they will be able to see the relevance of what they are learning to real life situations. As presented by Llagas and Corpuz (2018), Republic Act No. 10533 (Enhanced Basic Education Act of 2013) mandates that the curriculum shall be contextualized and global. This could be done when teachers have established objectives, properly sequenced contents, and strategies that are appropriate to the needs of learners. More importantly, there is a need to integrate real life situations in facilitating learning of students so that there will be a connection of what is learned from school and what is happening in the society.

Cisco's Global Education group (Cisco, 2010), being "actively engaged in the work of transforming educational systems to meet the needs of 21st century learners, educators and organizations," suggests four pedagogic practices for 21st century learning: inquiry-based learning, project-based learning, collaborative learning, and reciprocal teaching.

Corpuz and Salandanan (2015) state that inquiry-based learning enables students to participate in a process of asking questions to learn about a problem or topic. Structured problem-solving and the Socratic method are forms of inquiry based learning. Project-based learning gives students opportunities to work on complex, real-world projects that require interdisciplinary work and result in a product that is relevant for an authentic audience. Hence, learners are encouraged to construct reality through project-making. Collaborative learning requires students to work in collaborative groups to study content and complete projects. The individual succeeds only when the group succeeds. It emphasizes individual accountability and interdependence among members of the group. Reciprocal teaching includes summarizing, self-questioning, clarifying, and predicting to improve comprehension. According to Gruenbaum (2012), reciprocal teaching techniques among students with peers focuses on bringing meaning to text. For mature learners, reciprocal teaching can be modified to fit the purpose of mastering the concepts and skills then teaching these to others.

Rotherham and Willingham (2010, p. 19) claim that "[a]dvocates of 21st-century skills favor student-centered methods—for example, problem-based learning and project-based learning—that allow students to collaborate, work on authentic problems, and engage with the community."

Curriculum

In the Philippines, a massive implementation of the beginning of the Senior High School part of the K to 12 Basic Education Curriculum started in 2016. Ocampo (2014) stated that the K to 12 program demands that subjects or courses be taught from the simplest concepts to the complicated concepts through grade levels in spiral progression. She further said that this ensures a mastery

Table 1. Respondents according to curriculum strand

Strand	*N*	*n*
ABM	52	43
HUMSS	55	49
STEM	59	47
GAS	22	18
HE	4	3
ICT	14	13
Sports	8	7
Total	214	180

of knowledge and skills after each level. Nonetheless, Senior High School will observe the disciplinal approach since it will focus on a specialization under a specific strand of the four curriculum tracks: academic, technical-vocational-livelihood, arts and design, and sports.

The academic strands are intended for students who intend to pursue higher education. There are four academic strands: accountancy, business, and management (ABM), which focuses on business and industry; humanities and social sciences (HUMSS), which focuses on individuals and societies; science, technology, engineering, and mathematics (STEM), which focuses on the natural world and technology; and general academic strand (GAS), which is for students who have not yet decided on what field to specialize in.

The technical-vocational-livelihood strands are home economics (HE), industrial arts, agricultural and fishery arts, and information and communications technology (ICT). These prepare a student to become a job-ready, skilled, middle-level worker leading to an appropriate national certificate from Technical Education Skills Development Authority (TESDA).

The arts and design track prepares a student to participate creatively at a high artistic level in art activities such as, but not limited to, literature, dance, music, painting, sculpture, theater, television, film, and multimedia art.

The sports track aims to develop high-class athletes and coaches.

Methodology

Research design

The study used a descriptive-comparative method to find any differences in the level of awareness of and extent of pedagogic practices for enhancing 21st century skills among college faculty members coming from different curriculum strands.

Population and locale of the study

The participants were tertiary faculty members of a large university in Baguio City that offers different programs aligned to the K to 12 strands through a trimestral scheme. Coming from different age groups and cultures, they finished their undergraduate and graduate degrees aligned to their field of specialization which they are also following as teachers in the tertiary level. Their distribution according to curriculum strands is shown in Table 1. (The sports track is treated as a strand.) Of the 214 teachers (including those teaching part-time) during the 2015–2016 school year, only 180 responded to the questionnaire.

The population is dominated by teachers who have been teaching for over 15 years. Teachers in the university had been required to take a 'Methods of College Teaching' course. They also participated in seminars, trainings, and workshops emphasizing 21st century skills. Moreover, the university requires them to conduct interventions to reach out to their students who are having difficulties in their studies. They are assessed and evaluated by their respective students, department heads, and deans regularly.

Aside from the faculty members, three college deans, one associate dean, one department head, and one athletic director and former department head were purposively selected and interviewed to supplement and validate the responses of faculty members, taking into consideration that they are experts in the field of teaching and that they supervise and monitor teachers in their respective curriculum clusters.

Data gathering instrument

Data were gathered using a researcher-constructed questionnaire based on the list of 21st century core skills and subskills of Partnership for 21st Century Skills (2015). There were two wings of the questionnaire. In the middle was a list of the core skills and subskills. On the left wing, respondents were asked to rate themselves according to their level of awareness of the eleven subskills under the three core skills. On the right wing, respondents were asked to rate themselves according to their extent of pedagogic practice of inquiry-based learning, project-based learning, collaborative learning, and reciprocal teaching. To guide respondents, each subskill and pedagogic practice had a brief description in the questionnaire.

The questionnaire was administered to ten faculty members from the different strands of the curriculum cluster for reliability testing. Using Cronbach's alpha, the computed reliability coefficient was .895, indicating a very high reliability.

To validate the results, the researcher sought the views of the department heads and the college deans of the different curriculum strands regarding the data generated from the responses of faculty members. A copy of the generated data was shown to the concerned department head or college dean for reference. The data were used as bases for the questions and the responses

Table 2. Scale to determine level of awareness

Value	Statistical limit	Verbal description	Level of awareness
3	2.34–3.00	Fully aware (FA)	High (aware in all aspects of the skill)
2	1.67–2.33	Partially aware (PA)	Moderate (aware in some aspects of the skill)
1	1.00–1.66	Not aware (NA)	Low (not aware in any aspect of the skill)

Table 3. Scale to determine extent of pedagogic practices

Value	Statistical limit	Verbal description	Interpretation
5	4.20–5.00	Almost always practiced (AA), practiced above 90% of the time	To a very great extent
4	3.40–4.19	Often practiced (O), practiced 65-90% of the time	To a great extent
3	2.60–3.39	Sometimes practiced (S), practiced 37-64% of the time	To some extent
2	1.80–2.59	Rarely practiced (R), practiced 10-36% of the time	To a little extent
1	1.00–1.79	Almost never practiced (AN), practiced below 10% of the time	To a very little extent

Table 4. Level of awareness of 21st century skills

	Skills	Mean	Qualitative interpretation	Level of awareness of skills
I	**Learning and innovation skills**			
A	Critical thinking and problem solving	2.87	Fully Aware	High
B	Creativity and innovation	2.69	Fully Aware	High
C	Communication and collaboration	2.77	Fully Aware	High
	Overall	2.78	Fully Aware	High
II	**Life and career skills**			
A	Flexibility and adaptability	2.73	Fully Aware	High
B	Initiative and self-direction	2.74	Fully Aware	High
C	Social and cross cultural skills	2.74	Fully Aware	High
D	Productivity and accountability	2.77	Fully Aware	High
E	Leadership and responsibility	2.77	Fully Aware	High
	Overall	2.75	Fully Aware	High
III	**Information, media, and technology skills**			
A	Information literacy	2.73	Fully Aware	High
B	Media literacy	2.66	Fully Aware	High
C	Information, communications, and technology literacy	2.67	Fully Aware	High
	Overall	2.69	Fully Aware	High
	Grand mean	2.74	Fully Aware	High

of the interviewees. The general questions were based on the specific research problems of the study. Probing questions were asked based on the responses to the general questions.

Data gathering procedure

The distribution and the retrieval of the questionnaire were done through the deans' offices for two months. Within this period, the researcher also followed up from the faculty members, explained items they had doubts about, and retrieved questionnaires personally from them in their respective offices.

Interviews with the deans were conducted at their offices with their permission within a month. For more views, interviews with the associate dean and department heads were also conducted.

Treatment of data

The following statistical tools were utilized with the help of SPSS statistics software.

Means were used to determine the level of awareness and extent of pedagogic practices. The level of awareness of the 11 subskills was determined using a 3-point Likert scale (see Table 2) and the extent of pedagogic practice enhancing the 11 subskills was determined using a 5-point Likert scale (see Table 3).

Analysis of variance at a .05 level of significance was used to compare the level of awareness and extent

Table 5. Level of awareness of 21st century core skills grouped according to curriculum strand

Strands	Learning & innovation skills	Life & career skills	Information, media, & technology skills
ABM	2.67	2.72	2.53
HUMSS	2.89	2.86	2.82
STEM	2.73	2.68	2.66
GAS	2.85	2.81	2.70
HE	3.00	2.87	2.67
ICT	2.90	2.85	2.95
Sports	2.52	2.26	2.34

of pedagogic practice among the respondents coming from the different curriculum strands.

Post hoc analysis using the Scheffé test was used to determine differences of the level of awareness and extent of pedagogic practices among the respondents coming from the different curriculum strands.

Results and discussions

Awareness of 21st century skills

Table 4 shows that the respondents have a high level of awareness of learning and innovation skills, life and career skills, and information, media, and technology skills. The data show that the effort of the faculty members to continually learn about trends during this information age is evident.

To become a global teacher, one should be equipped with a wider range of knowledge of the various educational systems outside the country. In this era, the life of a teacher is not only confined inside the classroom. The teacher, who is essentially a consumer of information, must be knowledgeable about concepts and events that affect education (Bilbao et al., 2015).

Teachers' competence can be measured through mastery of content knowledge and pedagogic skills. A competent teacher should have the professional artistry to induce learning among students. Cognitive skills like critical thinking, creative thinking, and problem solving are required of a teacher in the 21st century. These need more than a basic understanding of educational theory and classroom management (Dayagbil, 2012).

Critical thinking and problem solving skills involve identifying, interpreting, using, analyzing, synthesizing, and evaluating information, as well as reflecting on and solving problems (Partnership for 21st Century Skills, 2015).

Jan (2017), using secondary data to describe 21st century teachers in the world and in India, concluded that technology needs to be integrated to achieve best quality pedagogy and that technological aid is an integral part in effective learning.

Table 5 shows the mean values of the level of awareness of the core skills when the faculty members are grouped according to curriculum strands. For each core skill, a one-way analysis of variance (ANOVA) was used to test if there is a significant difference among the means of the faculty of different curriculum strands.

For learning and innovation skills, $F = 5.995$ with an observed significance level $p = .003$. The computed F-value is significant warranting the rejection of the null hypothesis that there is no significant difference among the means. To determine which curriculum clusters vary from each other, a post hoc analysis was conducted using the Scheffé test. The comparisons revealed that a significant difference exists only between HE and sports. The HE teachers, obtaining the significantly higher mean, are more aware of the learning and innovation skills than the sports teachers.

The difference may lie on the nature of pedagogic knowledge and skills applied by the faculty members. Although both need physical skills, HE requires more of producing a product while the other requires performing a physical skill. As Norma Maria Rutab, former dean of the College of Teacher Education of the university, claimed, "Sports have rules, somehow you cannot apply creativity; follow the steps. That is the rule of the game" (personal communication, August 28, 2015).

For life and career skills, $F = 32.025$ and $p = .000$. The computed F-value is significant warranting the rejection of the null hypothesis that there is no significant difference among means. A post hoc analysis conducted using the Scheffé test revealed that the mean of the sports track is significantly lower than those of the other curriculum strands.

The finding implies that the sports teachers may not essentially focus on life and career skills. Their mean for social and cross cultural skills was the lowest. According to Partnership for 21st Century Skills (2015), these skills are manifested in several ways: knowing when it is appropriate to listen and when to speak; conducting oneself in a respectable, professional manner; respecting cultural differences and working effectively with people from a range of social and cultural backgrounds; responding open-mindedly to different ideas and values; and leveraging social and cultural differences to create new ideas and increase both innovation and quality of work. The mission of the physical education and sports group is

Table 6. Extent of pedagogic practices for 21st century core skills

Pedagogic practices	21st century core skills			Mean
	Learning and innovation skills	Life and career skills	Information, media, and technology skills	
Inquiry-based learning	4.36	4.23	4.00	4.20
Project-based learning	4.17	4.11	3.91	4.06
Collaborative learning	4.24	4.19	3.88	4.10
Reciprocal teaching	3.85	3.91	3.71	3.82

to maintain a healthy life. The focus is on physical fitness. According to Danilo Cong-o, athletic director of the university and former head of the Physical Education Department of the university, the low rating on social and cross cultural skills may be due to the challenge of handling multi-cultural students in physical education classes—there are foreign students in class who are very unlike the Filipino students (personal communication, February 23, 2016).

For information, media, and technology skills, F = 5.837 and p = .003. The computed F-value is significant warranting the rejection of the null hypothesis that there is no significant difference among means. A post hoc analysis conducted using the Scheffé test comparisons revealed that the means of ICT and HUMMS are significantly higher than the mean of sports.

The result confirms that ICT faculty must be knowledgeable about information, media, and technology skills since this is their field of specialization. As Jeffrey Ingosan, associate dean of the College of Information Technology and Computing Sciences of the university, said "I agree with the data since these 21st century skills are agenda of the faculty development program, seminars, and meetings" (personal communication, February 16, 2016). Miriam Janeo, former dean of the College of Arts and Sciences of the university, said "I agree with these since the faculty members have been exposed to seminars on the 21st century skills" (personal communication, October 29, 2015). Although sports faculty members are part of the institutional orientation on 21st century skills, they may feel that there is a further need for training about technology as used in their field. Cong-o (personal communication, July 14, 2016) suggests "attendance of faculty to national and international seminars, workshops and trainings to level up with international standards because usually rules in sports change every year." He further said that "the field of physical education is more on 'hands-on' than lecture." This means that more time is consumed in mastering physical skills than in teacher-dominated activities where high technology is usually used.

Pedagogic practices enhancing 21st century skills

Table 6 shows that inquiry-based learning (4.20) was practiced to a very great extent while collaborative learning (4.10), project-based learning (4.06), and reciprocal teaching (3.82) were practiced to a great extent.

Faculty members in the university are also observed by deans and department heads within the school year. The items for observation include art of questioning, teaching practices, and class management which are elements of inquiry-based learning. Janeo (personal communication, October 29, 2015) said that in her classroom observations, it is evident that the teachers incorporate 21st century skills in their classroom instruction.

Overall, project-based learning is only practiced to a great extent unlike inquiry-based learning which is practiced to a very great extent. In college, usually projects are submitted at the end of the period or the trimester. Considering that projects are done in a developmental manner, there are only few to submit at the end of the term especially when teachers prioritize the process of doing the project that the project itself.

When asked about projects required from students in ICT, Ingosan (personal communication, February 6, 2016) said that they conduct software development where students need to identify a problem of an organization or from the society, analyze existing processes, organizational structures, or materials including the requirements of the problem before they design a program or system to address the problem based on their analysis. Hence, integration of action research which use inquiry-based learning is intensified.

Hou (2015) found that reciprocal teaching enhances certain metacognitive awareness and reading comprehension of students. It is considered an effective strategic instruction for developing cognitive skills and for enhancing academic performance with a comfortable learning environment and monitoring of teachers.

An interview with a department head shows this. Nelson Notarte, a former head of the Civil Engineering Department of the university, stated that, in their college, they conduct more of a participatory approach by giving students a chance to demonstrate what they have learned such as in laboratory or field work that needs critical thinking and problem solving in actual situations. He further believes that in the field of engineering and architecture, critical thinking has a great impact in solving problems. Teachers exploit the ability to solve problems with or without devices (personal communication, Febru-

Table 7. Differences in the extent of pedagogic practices for 21st century core skills grouped according to curriculum strands

Pedagogic practices	Difference		
	Learning & innovation skills	Life & career skills	Information, media, & technology skills
Inquiry-based learning	.205†	.000*	.000*
Project-based learning	.001*	.000*	.000*
Collaborative learning	.000*	.000*	.000*
Reciprocal teaching	.275†	.011*	.000*

* significant, † not significant, using a .05 significance level

ary 16, 2016).

Table 7 shows the differences in the extent of pedagogic practices when respondents were grouped according to curriculum strands. To determine which curriculum strands vary from each other, post hoc analyses were conducted using the Scheffé test.

It was found that HUMMS, GAS, HE, and ABM teachers practiced inquiry-based learning to enhance life and career skills to a greater extent than sports teachers. ICT teachers practiced inquiry-based learning to enhance life and career skills to a greater extent than STEM and sports teachers. ICT and STEM teachers practiced inquiry-based learning to enhance information, media, and technology skills to a greater extent than sports teachers.

ICT teachers practiced project-based learning to enhance learning and innovation skills to a greater extent than STEM and sports teachers. ICT teachers practiced project-based learning to enhance life and career skills to a greater extent than GAS, HE, STEM, and sports teachers. ICT teachers practiced project-based learning to enhance information, media and technology skills to a greater extent than HUMMS, ABM, STEM, HE, and sports faculty.

HUMMS, GAS, HE, and ABM teachers practiced collaborative learning to enhance learning and innovation skills to a greater extent than sports teachers. GAS teachers practiced collaborative learning to enhance learning and innovation skills to a greater extent than HE, sports, and STEM teachers. GAS and ICT teachers practiced collaborative learning to enhance life and career skills to a greater extent than STEM and sports teachers. ICT faculty practiced collaborative learning to enhance information, media, and technology skills to a greater extent than HUMMS, HE, STEM, ABM, and sports teachers.

ICT teachers practiced reciprocal teaching to enhance life and career skills to a greater extent than STEM teachers. ICT teachers practiced reciprocal teaching to enhance information, media, and technology skills to a greater extent than HUMMS, HE, GAS, STEM, ABM, and sports teachers.

The university envisions itself as a community of scholars aggressively involved in the pursuit of knowledge who help preserve Filipino culture and values and act positively by training the students to think critically and creatively. The university's mission is to provide functional knowledge and skills, dynamic interaction and leadership in various disciplines for a better quality of life (University of the Cordilleras, 2015).

The philosophy serves as a springboard for social and moral preparedness of the youth. The vision directs to the pursuit of truth and roots and acting accordingly. Further, the mission implies the training of the youth with 21st century skills. These three perfectly blend for quality education. Strikingly, the first objective of the university is to develop an environment conducive to inquiry.

All faculty members in the university are also required to take a 'Methods of College Teaching' course which is a part of the faculty development program. In this course, 21st century skills are emphasized since the university caters to the preparation for different professions. In addition to the different methods of teaching, the art of questioning is emphasized for the development of critical and creative thinking which are important subskills of learning and innovation skills.

In the department and college meetings of faculty members of the university, integration of 21st century skills has been observed. Ingosan (personal communication, February 6, 2016) stated that these 21st century skills are on the agenda of the faculty development program, seminars, and meetings. "Besides, faculty members are required to possess these."

The Ontario Ministry of Education (2014) shared their ideas about effective 21st century technology-enabled teaching and learning practices. Collaboration is key in supporting pedagogic change. It said that there are changing roles of teacher and students—becoming co-learners and collaborators. Students must be taught the how of collaboration, as well as how to provide appropriate feedback. Using collaborative inquiry approach is key in changing practice.

There is no more room for complacency in this 21st century. This fast-changing world needs people with original ideas and initiative to improve the way things are done. Rhodora Ngolob, former dean of the College of Business Administration of the university, claimed that skills under life and career are observable among her colleagues in their college through the initiative and self-direction of faculty. She added, "What we teach our

students is the coping skills and as we learn and teach, we are learning ourselves" (personal communication, September 3, 2015).

This statement of Ngolob can be alluded to the timeless principle 'One can only give what one has.' For one cannot teach what one does not have. Bilbao et al. (2015) state that the classroom is the first place of curricular engagement and that the first experience sets the tone to understand the meaning of schooling though the interactions of learners and teachers that will lead to learning. Thus, when the teacher learns more, the teacher knows more and teaches more. This will provide an avenue for meaningful learning engagement among students.

Conclusions and recommendations

In the light of the research findings, it is concluded that faculty members of the university are very familiar with 21st century skills that enhance student learning and that they extensively implement pedagogic practices to enhance the 21st century skills of their students. In the case of the said university, the curriculum strands influence the faculty members' level of awareness of and pedagogic practices for enhancing 21st century skills.

Specifically, the findings on pedagogic practices suggests a needed enhancement on pedagogic practices for teaching 21st century skills especially in the field of sports where mechanics and rules change at least every year due to the need of events and sports experiences. Administrators may provide support to pedagogic practices enhancing 21st century skills through the provision of facilities and equipment that can be maximized such as in sports classes. Provisions of areas or centers for collaborative learning and reciprocal teaching, especially if these are done outside class periods, will maximize students' learning. Hence, provision for a natural setting involving real time for experiential learning such as activities in engineering and architecture will make learning more accurate.

With the limitation of having conducted the study in a specific university offering trimestral programs in the different strands, it is recommended that researchers may look into conducting the same study in other schools using the same variables to explore generalizability or into conducting the study using other variables of significance such as best practices that are worth emulating.

Acknowledgments

The author thanks her adviser, Dr. Ireneo Hilario; former dean of the College of Teacher Education, Dr. Norma Maria Rutab; her colleague, Carl Anacin, for guidance in writing this article; dean of the Graduate School, Dr. Cleofas Basaen; and her panel members, Dr. Ramir Austria, Dr. Rachel Bugtong, Dr. Miriam Janeo, Dr. Lloyd Orduña, and Dr. Joy Tio. She also thanks the Private Education Assistance Committee, a trustee of the Fund for Assistance to Private Education, for its support.

This paper is based on a dissertation of Oyam (2016) who was granted assistance by the Private Education Assistance Committee (PEAC) in 2015–2016 under its Research for School Improvement Towards Excellence (RSITE) Program.

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Philippine Education Research Journal
Enriching the discussion.
Improving Philippine education.

December 2019, volume 2019, number 1, pages 12–21
Refereed Article

Revisiting learning in a constructivist classroom: A phenomenography through photovoice

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Abstract
The paradigm of 21st century education opens opportunities to look at constructivist classrooms where learning is active, collaborative, and, most importantly, reflective. This study describes learning from the perspective of students in higher education. This is a phenomenographic research study that incorporates photovoice, a reflective method introduced by Burris and Wang in 1992. Photovoice was used as a pedagogical tool in the classroom to facilitate substantial reflections using digital photography. It explores a variety of descriptions evident in photos and reflections of students. To generate general descriptions of learning that are reflective, participants made reflections and analyzed their perspectives. Students described learning as an experience, a goal, a process, and an expression. Recommendations on becoming a constructivist teacher are given.

Keywords
constructivist classroom, reflection, reflective learning, phenomenography

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Introduction

In today's increasingly complex life, students are challenged to have reflective and innovative skills to meet demands in higher education. In a constructivist classroom, the learning environment is described as highly engaging, student-centered, and democratic. Teachers are trained to be facilitators who invite students to explore, discover, and responsibly discern for their own constructed learning. Learning episodes are created to challenge autonomous learners. In this perspective, teachers use multiple approaches to become successful in providing assistance for students to construct knowledge.

However, most essentialist teachers are challenged on how they could effectively deliver both the process and the content knowledge in a constructivist classroom because such a classroom focuses on the students' construction of their own learning. To reconcile this, according to Brooks and Brooks (1999), first, the students should be provided with the opportunity to present their concept prior to the teacher stating what the concept is. Hernandez-Willemsen (2012) added that the mind is like a rhizome, with its interconnection of knowledge and skills. She concluded that in a constructivist point of view, to build an understanding of a concept, the learner must be involved in constructing the concept.

Constructivist pedagogy empowers students to create their own meaning and understanding. Becoming a constructivist teacher is a call for innovation and creativity inside the classroom. Thus, the teacher has to maximize the use of available technology to improve the capability and move the imagination of the students.

Reflection plays a huge role in today's education. It greatly involves critical thinking, which is essential to learning. Reflection and reflective learning in the course of teaching may be used interchangeably. The objectives of this paper are to provide a description of learning and to present an overview of how phenomenography can be incorporated in teaching and learning in higher education.

Reflective learning primarily involves reflection. King (2002) describes reflective learning as a process of looking back at how a learner performed and how they make sense of what they were thinking the moment they acted, what occurred, and what they learned from the experience, storing these to guide them in handling things better the next time. It is a process of thinking about thinking wherein learners examine their thinking processes, beliefs, values, and understanding (Sellars, 2014). Learning Development (2010) posited that reflecting leads to finding patterns and associations in one's thinking coming from one's experiences in life and learning.

Figure 1 describes Kolb's (1984, as cited in Park & Son, 2011) model of experiential learning. It shows the four stages of the learning process in a circular course. First, the learner would have a concrete experience that

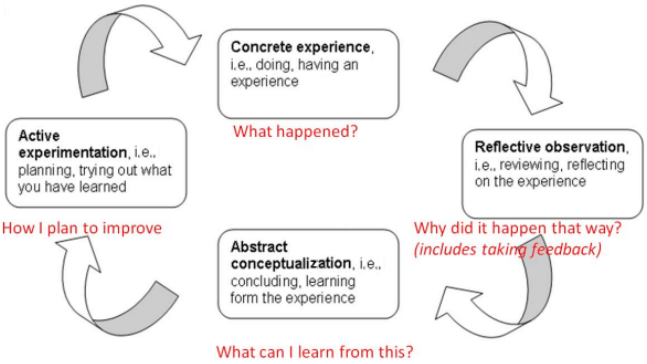


Figure 1. Kolb's (1984, as cited in Park & Son, 2011) model of experiential learning

would transfer to the second stage, reflective observation. After reflecting on the concrete experience, they would move to abstract conceptualization where they would create a conclusion extracted from the reflection of the experience. Then, they would move to the fourth stage, active experimentation, where they would test the new knowledge, leading them back to the first stage. From there, the learner may create new concepts from the new concrete experience and modify the learning, or apply the concepts to similar cases.

Materials and methods

The scope of phenomenographic research is focused on learning in higher education. Marton, Hounsell, and Entwistle (1984) stated that in phenomenography, the data is created directly from the learners through written responses, interviews, and even drawings or self-reflection. They shared that the content and setting should be those actually involved in learning which focuses on the experience of learning from the student's perspective and is based upon a phenomenological approach to research.

Marton et al. (1984) stated that in phenomenography, certain principles have to be ascertained: (a) the researcher should define the phenomenon of learning by extracting it directly from the learners' experiences, and (b) the process of learning has to be done in a natural situation which involves real content and settings. These two principles were used as guides in the data collection procedure of this study.

In phenomenographic research, the understanding of the studied occurrence may be extracted in "pre-reflective and conceptual thought," Barnard, McCosker, and Gerber (1999) stipulated. This type of research aims to expose certain differences in understanding from each respondent's perspective the ways of experiencing the phenomena. In addition, this utilizes a "second-order perspective" where the experience stays on the descriptive level of participants' understanding, and the study is presented in a unique, evidence-based manner.

In the same line of thought, Walker (1998) added that this is the essence of phenomenography, presenting not just the collective thought on the occurrence but also the variations of the ways each respondent experienced it and created concepts about it. To find and present the variations in a well-defined method would complete the definition of the phenomenon.

Phenomenography, the researchers' chosen method, is usually confused with phenomenology. To set things clear, in a phenomenological study, the phenomenon per se is investigated; in a phenomenographic study, the researcher investigates how (a group of) people view or understand the phenomenon. In this study, the researchers aimed to explore ways and processes of understanding constructivist learning through photovoice, a case of phenomenography, instead of seeking varied definitions and meanings of the phenomenon, constructivist learning, as in phenomenology.

Wang (1999, as cited in Schell, Ferguson, Hamoline, Shea, & Thomas-Maclean, 2009) defines photovoice as a "process [by] which people can identify, represent, and enhance their community through a specific photographic technique." Photography can be employed as a way to understand a concept or present an understanding of a concept (Gibbs, Friese, & Mangabeira, 2002, as cited in Schell et al., 2009). Schell et al. (2009) used photovoice as a learning tool inside the classroom, saying that Bagley and Cancienne's phrase 'voices of imagery' is "an appropriate way to describe our [Schell et al.'s] unique work with photography that bridges some of the gaps between teaching, learning, and research in the context of visual methods" (p. 340).

For this study, the researchers used phenomenography with a combination of digital photography and reflective process. Owners of the photographs were asked to represent their point of view by reflecting on the guide questions, taking photographs, and making deeper reflections on their photos. The researchers reflected, analyzed, and made recommendations on the significant themes from the photovoice session convened specifically for the sharing of participants' reflections.

Participants

The study focuses on the description of learning based on the photo reflections of two sections of second-year students from the College of Education of First Asia Institute of Technology and Humanities taking the course Theories of Learning. The two classes were handled by one of the researchers during the first semester of academic year 2015–2016. The photo reflections of the students were exhibited and the researchers asked the whole student population of the College of Education to vote for the photo reflection that adheres to their own reflection as to how learning is described. Of the fifteen students whose photos were chosen, only twelve

responded to the invitation to participate in the study. The twelve students were 16 to 18 years old and resided in Tanauan City, Batangas or nearby areas. Most of the respondents were female. Willingness and parental consent were the criteria in the selection of participants.

Data collection procedure

The data were collected using the following steps:

1. Introduction of photovoice. Photovoice (its meaning, origin, and purpose) was introduced and explained to the students as a process for research.
2. Photography lesson. Digital photography was taught in class. Guidelines in taking photos and the ethics of photography were discussed. Sample creative shots by the researchers were shown.
3. Motivation and preparatory discussions. The students were prepared for preliminary discussion on constructivism through different examples of photos happening in a classroom.
4. Reflective writing and photo shooting. Students were given two reflective guide questions: "How do I describe learning? Why is it important to reflect on my own learning?" They were instructed to use simile in writing their two-sentence reflection. They were then asked to creatively take a photo that depicts the description expressed in the reflection.
5. Final output. The layout of the original photo and its caption were customized using the piZap online photo editor.
6. Exhibit and selection process. All photo reflections were exhibited at the Atrium of FAITH. All students from the College of Education were asked to vote using the guide "To which photo reflection do I adhere with?" Fifteen photos were chosen.
7. Photovoice session (Reflection writing/focus group discussion). Of the fifteen participants whose photos were chosen, twelve accepted the invitation to join the study. They participated in the photovoice session and were convened for reflection writing.

   The participants were instructed to take ten minutes to reflect on the photo they took and to write and reflect on their answers to the guide questions: "Describe the photo and its caption. How do I describe learning? How is it related to my own learning?"

   The participants were given time to show their photos and share their individual answers to the given reflective questions.

Data/mode of analysis

This study explored, described, presented, analyzed, reflected on, and interpreted the photographs and reflections of the participants in expressing their experience of reflecting on their own learning. Figure 2 illustrates the process where the researchers and the participants contemplated on the themes discovered and shared eidetic insights.

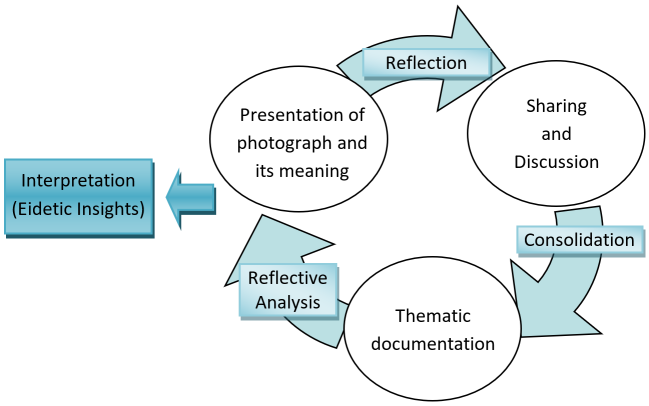


Figure 2. Process of doing reflective analysis and interpretation

The process of doing reflective analysis started with the presentations of the chosen photographs with the group, writing of reflections, sharing and discussions of the photo reflections, and consolidation of the shared reflections. From the consolidated reflections, the researchers proceeded with thematic documentation, which included the consolidation of the significant and relevant themes from the photo reflections. It was followed by the reflective analysis supported with the related readings from different sources. The eidetic insights came from the reflective analysis of the thematic documents and interpretation.

Results and discussion

Table 1 shows the chosen photographs, the captions written by the participants, and significant thoughts behind the photo. The captions state the answers to the guide questions: "Describe the photo and its title. What is the real story this picture tells? How does this photo relate to your own learning, specifically in higher education? Why is it important for you to reflect on your own learning?"

The participant who took Photo 1 (Participant 1) compared learning to her feet. She stated that the photo tells how she sees each of her achievements as footsteps towards her dream. She added, "learning helped me reflect and make realizations towards the fulfillment of my dreams." For her, learning is important in becoming competitive and courageously achieving dreams. It is a treasure and indeed a lifelong process.

Interestingly, one participant related learning to the process of writing as seen in Photo 2. She further stated that by writing she can adapt to what is written. "It is easy for me to know the purpose of why I need to write—so I can easily catch up. By writing, I can easily adapt to the lesson. I chose writing for me to freely express my

Table 1. Presentation of photographs

Photo 1.

"*Learning is like my feet.* It could take me to places."

Photo 2.

"*Learning is like using a pen.* It allows me to write my own ideas, perspectives, and story in life."

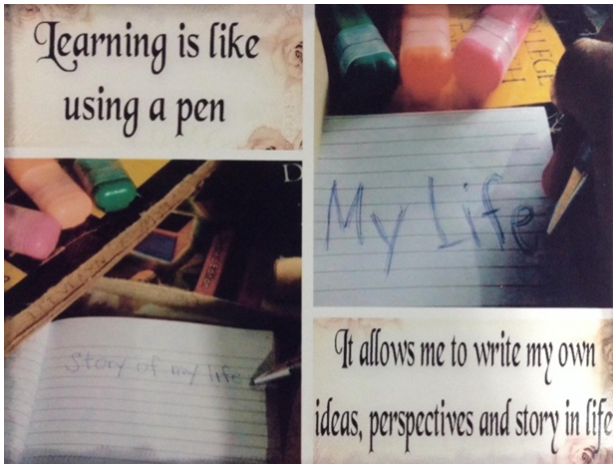


Photo 3.

"*Learning is like a growing plant.* It allows me to develop through time."

Photo 4. "*Learning is like having a passport.* It allows me to leave the world of curiosity and enter the world of knowledge by following and taking the right process."

Photo 5. "*Learning is like farming.* It allows me to harvest and how much efforts I've made will determine how much crops will I get."

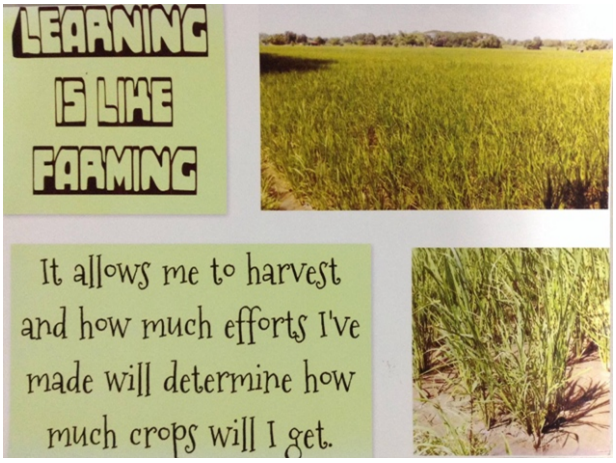


Photo 6. "*Learning is like stairs.* It is a step by step process for me to learn and leads me to experience how to reach the top."

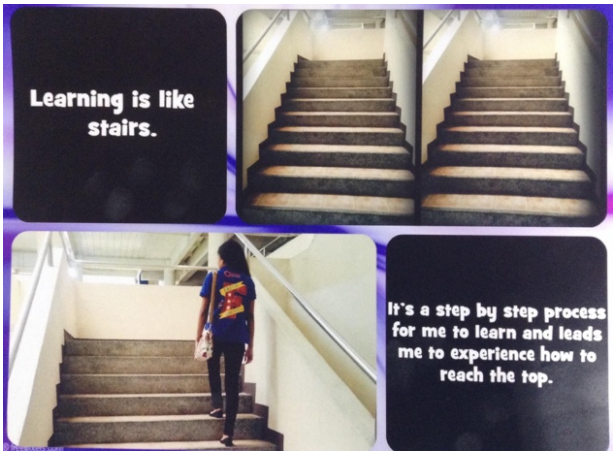


Table 1 (continued).

Photo 7. "*Learning is like playing guitar.* I cannot play a good song if it is out of tune. Like in learning, I can't have the knowledge if I do not let myself to be tuned up to be able to learn. If at first I don't succeed, I will try and try again."

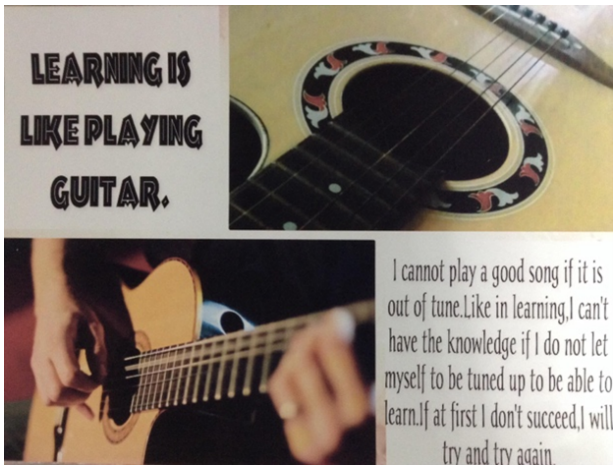


Photo 8. "*Learning is like reading a book.* It allows me to dream with open eyes and learn from experiences. "

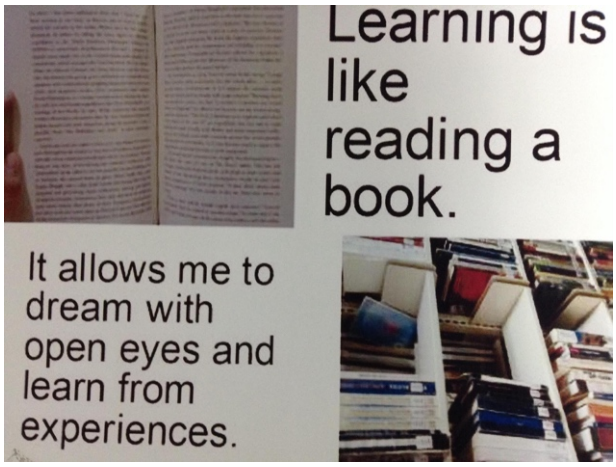
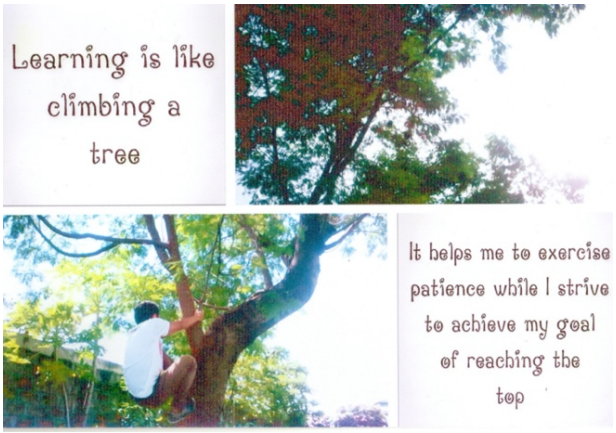


Photo 9. "*Learning is like riding a car.* It starts on a simple ride but ends up on a great journey."

Photo 10.
"*Learning is like a food.* It satisfies and fills my hunger for new knowledge and information."

Photo 11.
"*Learning is like an art.* It pushes me to the limitless of life."

Photo 12.
"*Learning is like climbing a tree.* It helps me to exercise patience while I strive to achieve my goal of reaching the top."



thoughts and feelings. It helps me understand better."

On the same note, another participant directly compared learning to a process as seen in Photo 3. It will eventually lead to somewhere good so long as "you're determined to do so," she said. "Learning is a part of my everyday life, by knowing that everything has a process, I feel very secured and delighted to learn everything that I needed and wanted to learn," she added.

Participant 4 had the same line of thoughts but added "growth" and "experience" in her narrative. She stated that "learning helps me to learn from my experiences. It does not only require me to think about what I have done, what I have read, or what I have experienced but it becomes a part of my growth—knowing how to use the new knowledge. It is always linked to action and theory practice."

Adom, Yeboah, and Ankrah (2016) found similar points in the process of construction of knowledge from a constructivist perspective. Honebein (1996, as cited in Adom et al., 2016) stated the same as the narrative in Photos 3 and 4, that "people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences." Adom et al. (2016) cite Cashman et al. (2008) and Hein (1991) when they say that constructivism "is based on the analogy or basis that people form or construct much of what they learn through experience." Hence, the key to learning in the constructivist classroom is viewing it as an experience and a process.

Another participant used farming as a simile for learning in Photo 5 as both require "dedication, understanding, and application of the new ideas," she said. "Above all, constant reflection requires the desire to win over the struggles no matter how hard it may seem to attain. I am like a grain that through farming and step-by-step process, my goals will be attained through hard work—studying hard. Learning is a never-ending process, and the best teacher is our experiences."

Another interesting comparison can be seen in Photo 6 as learning was compared to climbing a staircase, a step-by-step process. Participant 6 further elaborated that "learning is acquired through experience, study, and what is being taught, then progress could take place and finally reach the top called knowledge. Learning takes time and space. Self-directed learning process is most powerful in facilitating inspiring individual development. It empowers personal learning and development."

In Photos 3, 5, and 6, however, the participants imposed that learning requires more than a good environment or a good facilitator. It is a process within the learner that requires determination and engagement as participants see learning as a goal, hence "engaging the student in the teaching and learning processes so that his engagement would enable him personally [to] discover the knowledge or 'truth' " (Adom et al., 2016, p. 2). Motivation should be then further taken into consideration for students who view learning this way. Teachers must then have to explain why students need to learn the content and what benefits they will achieve by doing so. Kim (2005, as cited in Adom et al., 2016) supported this in his claim that "unless learners 'know the reasons why,' they may not be very involved in the content taught even by the most severe and direct teaching method."

Participant 7 elaborated on learning as an event that is not bounded by the four corners of a classroom. Her photo implies that learning is everywhere. She said it is like playing guitar. She stated, "I can acquire knowledge through simple things in my everyday life. Experiences help me to have an insight and clear vision of how important learning is. I believe that learning is a continuous process. I have to develop and enhance myself. If I have [a] goal in mind, it could lead me to a better future." Hogan and Howlett (2015) noted this phenomenon of being "more open" as scholars put it, as we see learners abandoning old ways of learning and realizing varied ways to learn even outside the classroom.

Photo 8 is a participant's reflection comparing learning to reading a book. Participant 8 stated that she intends to read more books in different genres so she can develop the holistic aspects of life. "It helps me grow more into [a] more mature individual," she added. The behavior of the student fuels the learning process in this sense. She views learning as a process, a series of actions towards growth. In the same thought, Mezirow and Associates (2000) stated that learning is "planning a course of action," "implementing one's plans," and "building competence" towards the goal: growth and maturity.

Like Participant 4, Participant 9 also touched on learning and experience. She uttered, "as I live my life, I continue to learn and experience a lot of different things which made my journey great." She also mentioned learning as similar to riding a car. She stated, "at first, riding a car may seem to be simple and ordinary but when I started to have experiences, I consider my ride as meaningful, great, and essential. I should learn to improve my skills and nurture my abilities to be extraordinary. With this, I learn that life itself is a wonderful world of learning."

Participant 10 shifted focus and expounded on comparing learning to food. She stated that in learning, "part and parcel of our growth and nourishment is the benefits that food provides us. Therefore, learning is more beneficial when we take in food boosters that will suffice our bodily needs." She further elaborated on this when she added, "I seem to eat a lot of food; that is because I want to sustain the needs of my body to enable me to perform my tasks and duties. And also, food is not only for the mind, it is also for the soul. So, learning would basically be more fun when I take in healthy foods that will help my body to cope up with the everyday tasks."

Participant 11 had a different perspective. She stated that learning is more like an art as it "requires uniqueness, creativity, willingness, and thinking out of the box." She further explained this: "Just like in accumulating learning, an art requires willingness. Learning should be fun. It should not only be in the cognitive but in the affective domain as well. That is why learning is very important inside the classroom. It is like putting our heart to it."

Participant 12 has the same line of thinking as that of Participant 6, that learning is more like climbing a tree. He added that "learning is not just present in books but in my experiences too. There is learning in everything I do, even just for fun." He also narrated how learning is "pushing through what I think my limitations are—skills and capabilities—for my betterment. Though hard, as all things are, there is a feeling of satisfaction in the end." Achieving things, growing and developing under circumstances may be challenging. It is not learning when one cannot apply what has been learned, he ended.

Photos 11 and 12 viewed learning as an activity that requires self-empowerment, dedication, and an application of knowledge. Similarly, Badie (2016) examined learning as an activity of construction, and posited that "knowledge acquisition (and learning) are transformative through self-involvement in some subject matter." Watkins, Carnell, Lodge, Wagner, and Whalley (2002, as cited in Badie, 2016) were able to capture the participants' views of learning when they stated that "knowledge acquisition is the reflective activity which enables the humans to draw upon their previous experiences [and background knowledge] to conceptualize [and, respectively, to realise and to understand in order to] evaluate the present, so as to build up and shape future actions and to construct [and, subsequently, to develop the construction of] new knowledge."

Table 2 presents the significant themes and relevant themes extracted from the photo reflections which were used in the reflective analysis and interpretation to come up with the eidetic insights. Significant themes are the primary themes; these are direct descriptions of what learning is, based on the participants' reflections on their photos. Relevant themes are the subthemes based on the participants' explanations of the relationships of the photos to their descriptions, thus deepening their answers.

For instance, Participant 11 captioned her photo "Learning is like an art." Her explanation of this is that learning is an event of creativity and a way of thinking outside the usual patterns. This was further deepened by the subtheme; to fuel the creativity, passion in doing things (learning) is then a necessity.

Eidetic insights from extracted themes

The phenomenographic part of the study is in the presentation of the verbatim sharing of reflections. Eidetic reduction is the process of assessing the patterns of meaning in the narratives of the participants and getting the perceived nucleus of truth (Ramirez, 2006) or "eidos." To uncover the eidos of the extracted themes, the researchers analyzed and grouped the significant descriptions of how the participants view learning. They then classified the eidetic insights (Figure 3).

Learning as an experience

"Learning is experience. Everything else is just information."

–Albert Einstein

Participant 4 shared "Learning helps me to learn from my experiences. It does not only require me to think about what I have done, what I have read, or what I have experienced but it becomes a part of my growth—knowing how to use the new knowledge." This meant that learning is thinking about the experience and applying the knowledge gained.

Participant 6 posted "Self-directed learning process empowers personal learning and development." Similarly, Tarrant (2013) used the same word, empowerment, to define the experience. He said that the concept of reflection somehow empowers the person reflecting as they are considered as a part of the process, where they create a sense of identity as they see their variations of the interpretation of the occurrence.

Knowledge is constructed based on personal experience, meaning, it is self-constructed and is feasible through reflection. According to Participant 7, "I can acquire knowledge through simple things in my everyday life. Experiences help me to have an insight and clear vision of how important learning is." For Participant 12, "Learning is not just present in books but in my experiences too. There is learning in everything I do, even just for fun. It is pushing through what I think my limitations are—skills and capabilities—for my betterment." Experiences give important insights and give opportunities to discover limitations and skills.

In the same note as Participant 12, Gibbs (1988) concluded that experience alone is useless if the learner is not able to reflect on it. From the reflections of the experience, one extracts the feelings and thoughts that shall provide conclusions. Learners then either use these conclusions to get through the same situations or modify existing conclusions to deal with new situations effectively. Without reflection, these experiences, considered as learning potentials, will simply be forgotten.

Learning as a goal

"Education is our passport to the future, for tomorrow belongs to the people who prepare for it today."

–Malcolm X

Participant 1 shared, "The photo depicts how I make each of my achievement as footsteps towards my dream.

Table 2. Thematic documentation from shared reflections

	Photograph number	Significant themes	Relevant themes
1	*"Learning is like my feet."*	Aiming to reach goals/dreams	Making progress towards fulfillment of dreams
2	*"Learning is like using a pen."*	Having a purpose	Adaptation and expression
3	*"Learning is a growing plant."*	Determination; making a difference	No one should be forced to learn; learning is a process
4	*"Learning is like having a passport."*	Thinking about the experience; connecting knowledge with application	Learning is a process; desiring to engage oneself to learn; taking the process
5	*"Learning is like farming."*	Dedication; application of new ideas; desire to win over struggles	Effort; hard work; process; goals will be attained
6	*"Learning is like stairs."*	Knowledge is constructed based on personal experience; it is a step-by-step process; learning takes time and space; self-directed learning experience	When one experiences things, progress takes place; learning to adjust; empowering personal learning and development
7	*"Learning is like playing guitar."*	Having a goal and striving hard to reach it; experiences give important insights	Way of expressing thoughts and feelings; continuous process to enhance and develop oneself
8	*"Learning is like reading a book."*	Developing or improving oneself	Growing into a mature individual
9	*"Learning is like riding a car."*	Gaining learning through experience; reflecting on the positive side to reach the goal	Improving skills and nurturing abilities; learning is interesting and exciting
10	*"Learning is like a food."*	Growth	Sustaining to perform well
11	*"Learning is like an art."*	Dedication and proper attitude towards achieving one's goal; creativity, willingness and thinking out of the box; an expression of feelings and thoughts	Like art, we need passion in doing things; encouragement is important; learning is understanding and sharing
12	*"Learning is like climbing a tree."*	Discovering limitations and skills	Applying what has been learned

Reflecting on my learnings helped me make realizations towards fulfillment of my dreams." For her, aiming to reach goals, having a purpose, and making progress towards the attainment of goals made sense for learning reflectively. Participants 7, 8, and 9 shared that having a goal and trying to reach it, developing or improving oneself, and improving skills and nurturing abilities are significant in learning.

With the same point of view, Schön (1991, as cited in Pollard, 2002 and Tarrant, 2013) noted that learners distance themselves from the experience and try to see it using a different perspective, with the aim of refining how they will tackle the same situation in the future. Only through this, can one check and scrutinize the implied understanding that might have been developed from repetitive experiences. This is how they modify concepts that have already been established, creating a new way to understand the experience.

Learning as a process

The capacity to reflect on action is to engage in the process of continuous learning. This is one of the defining characteristics of professional practice (Schön, 1991, as cited in Tarrant, 2013).

Participant 6 posted, "Self-directed learning process is most powerful in facilitating inspiring individual development." For them, learning is a step-by-step self-directed process that takes time and space.

According to Participant 3, "Learning is part of my everyday life, by knowing that everything has a process, I feel very secured and delighted to learn everything that I needed and wanted to learn." Learning is a process

where no one is forced to learn.

Participants 5 and 7 said that learning is a continuous process to enhance and develop oneself, and is an application of new ideas.

Reflection necessitates the activation of subjectivation, that is, the individual must become the object of their own reflection to be able to provide new meaning to themselves within a given situation, Freda and Esposito (2017) stated. This can be observed from the narratives of Participants 5 and 7, as well as Participants 6 and 3 who all recognized the value of learning as a gradual course done through reflection.

Sellars (2014), in the same note, agreed that reflective learning mirrors Kolb's cycle as it presents the clear process of reflection. Indeed, reflection is somehow an interaction for deeper understanding of a concept or a phenomenon that may occur in collaboration or even in self-reflection, Henderson, Napan, and Monteiro (2004) added.

Learning as an expression

Learning entails determination and effort. Participant 3 confirmed that dedication and determination make a difference. She said, "It helped me realiz[e] and reflec[t] that everything can be learned if you're determined to do so."

Learning is an expression. Participant 2 said, "By writing, I can easily adapt to the lesson. I chose writing for me to freely express my thoughts and feelings. It helps me understand better."

It entails effort. According to Participant 5, "I used the word farming because learning requires dedication, understanding, and application of the new ideas. Above all, constant reflection requires the desire to win over the struggles no matter how hard it may seem to attain."

Participant 6 declared that "it empowers personal learning and development." In addition, Participant 11 shared, "Reflective learning is like an art. It requires uniqueness, creativity, willingness, and thinking out of the box. Just like in accumulating learning, an art requires willingness." It is likewise "an expression of feelings and thoughts."

The wealth of knowledge and routines that they can employ, in fact, is so automatic that they often do not realize why they perform a certain plan or action over another. However, when questioned, they are able to reconstruct the reasons for their decisions and behavior (Berliner, 2001).

Figure 3 illustrates the phenomenon of learning using photovoice. In conclusion, learning using photovoice hones expression as it promotes empowerment and creativity. Learners are freely able to express their understanding of the topic pushing them to be more creative and dedicated to answer not just "what have I learned" but "how did I learn it." This leads them to exploration and discovery, an experience of learning. The acquisition and application of knowledge which is the main goal of any teaching-learning process can also be gleaned from the learners resulting in growth and adaptation.

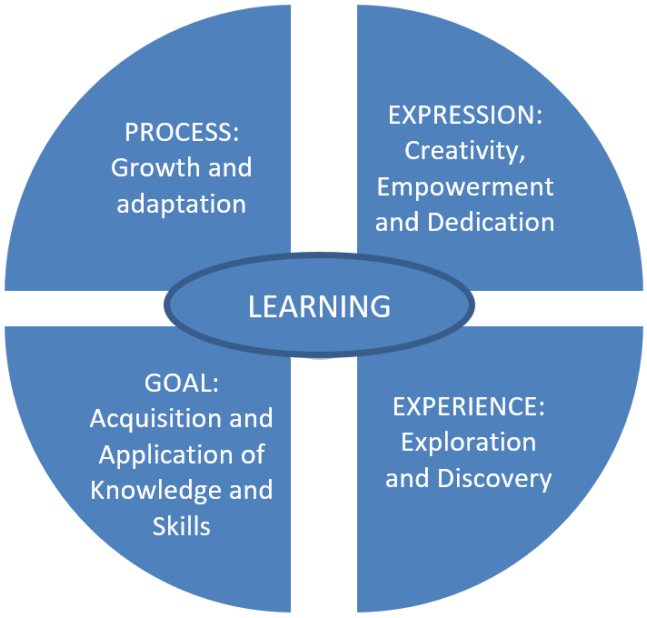


Figure 3. Describing learning in a constructivist classroom using photovoice

Conclusions and recommendations

The findings lead to various understandings of learning in a constructivist classroom. It is a room where learners can grow and adapt, experience learning on their own at their own pace, and acquire skills through application of concepts as they journey through the learning process. These findings then encourage educators to build an environment where learners can make mistakes without fear, explore notions, and create and experiment with new ideas without consequences on grades or failing.

To further promote learning, the researchers believe that in a constructivist classroom, after each learning instruction episode, an activity or practice of reflection may be provided. This further ensures deeper retention and appreciation of learning. Aside from a catalyst of the learner's learning process, the reflective practices and output can also be used further by the teacher as a guide in crafting and evaluating the teaching-learning process, learning objectives, and methodologies. Hence, this will ensure that the next learning instruction episode is centered not on the content but on the learner, which is the goal of every constructivist classroom.

Acknowledgments

The authors thank the First Asia Institute of Technology and Humanities (FAITH), the FAITH College of Education, and the Private Education Assistance Committee, a trustee of the Fund for Assistance to Private Education, for their support.

Magbuo was granted assistance by the Private Education Assistance Committee (PEAC) in 2017 under its Dissemination Assistance for Research in Education (DARE) Program to present an early version of this paper (Titular & Magbuo, 2018).

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Improving Philippine education.

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Structured abstracts

Starting next issue, the PERJ will adopt structured abstracts proposed by Mosteller, Nave, and Miech (2004).

> A structured abstract is a formal and compact summary of an article's main features and findings. As does a table or a figure, it has a predictable structure that compresses information into a small space and can be read independent of the main body of the article. The structured abstract is longer and more detailed than the standard paragraph-style narrative summary. On the printed page, the structured abstract appears between the title and the main body of the article. It includes basic items applying to all articles (i.e., background, purpose, research design, and conclusions) and several additional items that apply to some articles but not to others (i.e., setting, population, intervention, data collection and analysis, and findings). (p. 29)

Authors of Refereed Article and Technical Report submissions may use the following template (Mosteller et al., 2004, Fig. 2; Kelly & Yin, 2007, Table 1). (Suggestions for key items to be included in these sections are given by Coalition for Evidence-Based Policy (2005).)

Background/Context: Description of prior research on the subject and/or its intellectual context and/or its policy context (*The abstracted study's niche, specialization, narrower focus, or goal within the prior research context*)

Purpose/Objective/Research question/Focus of study: Description of what the research focused on and/or why (*Claim or claims examined by the study (e.g., initial hypotheses can serve as claims)*)

Setting: Specific description of where the research took place (*Qualifiers and exceptions in choice of settings and possible implications for replication or other use of the research findings*)

Population/Participants/Subjects: Description of the participants in the study: who (or what), how many, key features (*Qualifiers, exceptions, and other possible idiosyncrasies in the pool of participants*)

Intervention/Program/Practice: Specific description of the intervention, including what it was, how it was administered, and its duration (*Assurances or cautions regarding the fidelity of implementation*)

Research design: Description of the research design (e.g., qualitative case study, quasi-experiment, secondary analysis, analytic essay, randomized-controlled field trial) (*Confidence in the findings likely to be associated with the choice of research designs and the stage of the research investigation*)

Data collection and analysis: Description of plan for collecting and analyzing data, including description of data (*Grounds, warrants, and other data collection or analysis shortfalls (e.g., incomplete data, low response rates)*)

Findings/Results: Description of main findings with specific details (*Major objections and rebuttals (e.g., rival explanations)*)

Conclusions/Recommendations: Description of conclusions and recommendations of author(s) based on findings and overall study (*Author's confidence in conclusions and recommendations*)

Here is a structured abstract for the Refereed Article of Oyam (in this issue):

Structured abstract

Background: To succeed in today's world requires learning and innovation skills, life and career skills, and information, media, and technology skills. These 21st century skills can be taught and learned using inquiry-based learning, project-based learning, collaborative learning, and reciprocal teaching.

Purpose: Find college teachers' level of awareness of and extent of pedagogic practices for enhancing 21st century skills of students.

Participants: 180 college teachers from seven curriculum strands in a large Philippine university during the 2015–2016 school year

Research design: Descriptive-comparative research

Data collection and analysis: A researcher-constructed, self-administered questionnaire asked participants to rate themselves on how aware they were of eleven skills and on how often they practiced four pedagogic practices. Means, analyses of variance at a .05 significance level, and post hoc analyses using the Scheffé test were used. Interviews with some school administrators were conducted to validate the results from the responses.

Findings: The participants were fully aware of the eleven skills, with those from some strands being significantly more aware and those from one strand being significantly less aware. Inquiry-based learning was

practiced to a very great extent while the other three practices were practiced to a great extent. The extent of pedagogic practices varied significantly when participants were grouped according to strands.

Recommendations: Administrators could provide support to teachers from the strands identified as less aware or practicing to a lesser extent. Similar studies could be conducted in other schools to improve the generalizability of the findings.

Here is a structured abstract for the Refereed Article of Titular and Magbuo (in this issue):

Structured abstract

Background: Photovoice can be used as a pedagogical tool to help students describe how they understand a concept.

Purpose: See how students describe learning and show how phenomenography can be used in higher education teaching and learning.

Participants: Twelve second-year undergraduates in a Philippine university during the 2015–2016 school year

Research design: Phenomenography using photovoice

Data collection and analysis: Students in two sections wrote reflective descriptions of learning and took related photographs. These photo reflections were exhibited to students of a college. Of the fifteen participants whose photo reflections were chosen by vote, twelve participated in the study. The researchers identified themes in the reflections they shared during a focus group discussion.

Findings: Learning in a constructivist classroom was described as an experience, a goal, a process, and an expression.

Recommendations: Teachers could provide a reflection activity after each learning episode.

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