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TEACHERS' INSTRUCTIONAL BELIEFS ABOUT STUDENT-CENTERED PEDAGOGY

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ABSTRACT

The purpose of this study was to examine teachers' opinions about student-centered instructions, as well as to study effective factors in their instructional beliefs. Six important components of student-centered pedagogy examined in this study that were, educational objectives, content, teaching strategies, and instructional assessment, educational technology and learning environment. The methodology of this study was a quantitative research. An inventory to measure teachers' beliefs about student-centered pedagogy employed to gather data. SPSS 15 was used to produce the mean; standard deviations; Pearson Product Moment Correlation (r); T-test; Bonferroni Post Hoc test and ANOVA. Results showed that the components of student-centered pedagogy have a high influence on their instructional beliefs and also there was a relatively high positive correlation between components of student-centered pedagogy. The analysis some variables such as gender, age, school level and teaching experience indicated, some those had an impact on student-centered beliefs. There was no significant difference between the male and female teachers' beliefs on overall student-centered pedagogy. The analysis also showed overall means of the student-centered pedagogy was statistically significant for elementary, middle and secondary school teachers, age groups and teaching experience.

Keywords: Student-Centered Pedagogy**;** Teacher Beliefs; Primary, Middle, and Secondary Schools

INTRODUCTION

Student-centered pedagogy or student-centered instruction/education; also called engagement and active learning is an approach to education focusing on the needs of the students, rather than those of others involved in the educational process, such as teachers and administrators. This approach has many implications for the design of curriculum, course content, and interactivity of courses. McCombs and Whisler (1997) about student-centered say "The perspective that couples a focus on individual learners (their heredity, experiences, perspectives, backgrounds, talents, interests, capacities, and needs) with a focus on learning (the best available knowledge about learning and how it occurs and about teaching practices that are most effective in promoting the highest levels of motivation, learning, and achievement for all learners). This dual focus then informs and drives educational decision making. The learner-centered perspective is a reflection of the twelve learner-centered psychological principles in the programs, practices, policies, and people that support learning for all". According to King (1993:30) student-centered instruction is a teaching strategy that fundamentally breaks many of the traditional boundaries governing the way students have-by and large-been conditioned and expected to learn for centuries.

According to Peyton et al. (2010) student-centered instruction emphasizes the following approaches: Building on learners' experiences and strengths while also teaching them how to use specific learning strategies to accomplish their goals (CAL, 2007; Ellis, 2008; Nunan, 1988); focusing on the needs, skills, and interests of students while providing learning experiences that promote autonomy, choice, cooperation, collaboration, meaningful communication, and meta cognitive awareness (TESOL, 2009); providing opportunities for students to use the target language to negotiate meaning with teachers and other students in group work, project work,

and task-based interactions while also providing guidance, modeling, and feedback about progress (Adams, 2008; Anton, 1999; Beckett, 2005; Crookes & Chaudron, 2001; Gutierrez, 2008; Lin & Chien, 2009; Morris & Tarone, 2003; Reder, 2005; Reder et al., 2003; Zeng & Takatsuka, 2009; Zhao & Bitchener, 2007); facilitating student work in pairs, in groups, or alone depending on the purpose of the activity, creating learning opportunities that mirror actual tasks in students' lives (Bell, 2004; Ellis, 2009); and using "techniques that enhance students' sense of competence and self-worth" (Brown, 2001:47).

Educators agree that engagement promotes student achievement. Downer et al. (2007) suggested that children enjoy doing small-group problem-solving assignments. Students used requisite cognitive stimulations, social, and motor skills to meet small group goals. Doherty and Hilberg (2007) pointed out that learner-centered pedagogy promoted student achievement. The five standards for effective pedagogy did not raise student academic achievement or help student diversity (Doherty & Hilberg, 2008). In another research, Nykiel-Herbert (2004) found that learner-centered pedagogy raised student achievement. Reynolds (2007) and Carbo (2008) linked learner-centered instructional methods to student achievement.

Learner-centered pedagogy contains features that support needs, interest, experience, and ability. Small group instructions supervised by experienced teachers support student-focus goals (Prince and Felder, 2006). Small group instructions help the teacher's effort to complete diversified instructions. It is easier to teach a small group of students that a large class. Teacher-centered instructions include whole-class instruction, teacher-directed small group instruction, and teacher demonstrations. A short session of whole-class instructions allows teachers to clarify directions and rules. Doherty and Hilberg (2007) used the five standards for effective pedagogy to guide their study. The standards promote learning through joint productivity, reading across the curriculum, connecting new experiences to prior knowledge, promoting complex thinking through engagement, and stressing goal-directed communication through small group. Doherty and Hilberg identified a close connection between teachers" styles, classroom designs, and student achievement.

Collaborating, social interaction, negotiating, and openly communicating to explain the influence of the socio cultural theory in the design of Doherty and Hilberg's (2007) research. Students of similar demographic features bond together for social as well as academic groups (Ohl & Cates, 2006). While students worked collaboratively in groups to meet academic goals, both teacher-centered and student-centered learning prevailed in the same classroom environment. Similar conclusions from both researchers suggested that learning depends strongly on conversations between teacher and student. The conclusions stay consistent with the result of the statistical analyses. Student-focused instructions help to support learning styles and meet student academic goals. Olson (2006) asserted satisfying student learning-styles is counterproductive. It is important to meet the student goal through encouragement. Teaching from concrete to abstract helps clarify difficult concepts. Prince and Felder (2006), Olson (2006) agreed that a learner's efforts determine the extent of success. Using recent research, Olson (2006) argued there is no empirical evidence to support the claim that teaching to meet student preferred learning style increases achievement but rather, to the contrary. This idea is reasonable because student participation helped the performance outcome. Adapting instructional environments to support learning to generate more success than teaching to match student learning styles.

The strength of student and teacher relationships influences learner-centered classrooms. Jones (2007) asserted that teachers play the main role in promoting academic achievement in students. Students emulate teachers and build confidence through relationships. Relying on the teacher create problems for students with decreased confidence in a teacher's character. The teacher's role includes building a personal relationship based on trust and empathy (Mawhinney & Sagan, 2007). Students benefit from the teacher's social and emotional support. The parties build relations on principles governing teacher and student classroom behaviors. Teachers organize instructions, configure classrooms, decide group formats, and supervise instructions (Downer et al., 2007). A positive learning atmosphere encourages teacher creativity and fosters students' success. Nekovei and Ermis (2006) and Parsley and Corcoran (2003) suggested that flexibility in

teaching methods and adequate learning support help to improve student achievement. High-quality classrooms embrace the student's needs, encourage personal connections, and promote autonomy while providing children with learning opportunities (Ysseldyke et al., 2004). This classroom environment is important to support learner-centered instruction.

Students benefit from the technology used to support learner-centered instructions. Some educators overestimate the value of computer-based instruction, and others highlight the capacity of the method to support student creativity and independence (Passerini, 2007). Computer technology encourages learner's interest through interactive and entertaining experiences (Hsieh & Sun, 2007). A well-structured learner-centered instruction reduces student dependency on the teacher for information. Learner-centered technology fosters cooperative group learning in and across schools. McGrail (2007) found that inadequate physical space interferes with a teacher's ability to interact with students and integrate computer technology correctly in instruction. McGrail (2007:59) explained the value of space in this definition "pedagogy is the ways in which an instructor designs the materials and social space the students and teacher occupy as they carry out a curriculum". McGrail indicated that for computers to be beneficial to students in a learner-centered environment the teacher creates adequate space for using computers and spreading out the computer peripherals.

Cornelius-White (2007) suggested that learner-centered pedagogy lessens the instances of teacher directed instructions and increases student involvement in their own learning. Historically, the teacher dominates knowledge delivery and promotes student-dependency for knowledge (Prince & Fedler, 2006). This elevates the teacher as the sole authority and hinders the student's intellectually growth.

One of the most important things a teacher can provide their students with is a learning environment in which they feel comfortable. Teachers should create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation. Learning environment research has provided a useful focus in evaluations of educational innovations (Fisher, Aldridge et al., 2001; Fraser & Maor, 2000; Maor & Fraser, 1996; Newby & Fisher, 1997; Teh & Fraser, 1995; Zandvliet, 2003; Jegede et al., 1995; Taylor & Maor, 2000; Walker, 2002; Moos, 1979). Past research has found links between classroom environments and student outcomes (Fraser, 1994 & 1998a; Fraser & Fisher, 1982; Goh et al., 1995). Technology in the school is one of the best resources that allow students to become actively engaged in the learning process (Aldridge et al., 2003; Trinidad et al., 2001). Such research has shown that students' outcomes are likely to be better when the actual learning environment more closely matches their preferred learning environment (Aldridge et al., 2003; Fraser, 1998b, 1999; Fraser & Fisher, 1983). Brown and Palinscar (1989) believe that the role of learning environments, of collaboration, of community, and of environments that encourage different approaches in students.

LEARNING THEORIES AND STUDENT-CENTERED PEDAGOGY

The *Cognitive Theory* focuses on intrinsic and individual mental processes such as thinking, memory, knowing, and problem-solving. In this way individual learner knowledge can be seen as schema, which is a symbolic mental structure. Petraglia (1998) likens this schema to a situated cognition of everyday experiences to stimulate interest in an authentic learning environment.

Social Learning Theory or situational learning theory is based on the idea that learners can acquire knowledge from observing other people in a social context or situation. Gardner's (1999) Multiple Intelligences complements Social Learning Theory by allowing peers with similar learning styles to work together effectively, or conversely pairing students with differing learning styles to engender balance of student work and group dynamics (Riha & Robles-Pina, 2009). Within this learning theory knowledge is seen as a cultural extension of meaningful situations rooted in metacognition and personal experiences that is more easily and effectively

learned by the individual within a social sphere (Leidner et al., 1995). In viewing the constructivist theory as it pertains to learner-centered instruction in educational technology, researchers, Nessett and Large (2004) suggest utilizing scaffolding to provide structure while students are learning new knowledge. Often time scaffolding can be applied in the form of a graphic organizer which allows the brain's ability to store information to become unlimited through pictorial representations and the chunking and organizing of new knowledge. As the new knowledge or skill is developed, the scaffolding is gradually removed to place the learner back in control of their own learning.

The *Constructivist Theory* model calls for learner-centered instruction where individuals learn by jumping in and working out the task versus when they are given specific instructions. In this way students learn to control the pace of their own learning. This theory also lends itself to more performance based methods of assessment which advocates a learner-centered approach to instruction. Andrew (2007) pointed out that constructivist adoption causes shifts from long lecturing, drills, and rote learning to interacting and building knowledge. Teachers merge constructivist-based pedagogy into instructions to support learner-centeredness (Valli & Buese, 2007). Richards, Brown, and Forde (2007) recommended that teachers use pedagogy to find the needs of students and promote academic achievement in a learner-centered context. Teachers need guidelines to transition to constructivist teaching styles (Andrew, 2007).

Educators use constructivism as a guide to adopt learner-centered pedagogy, and create student-centered classrooms (Froyd, 2007). Constructivism contends that students create mental images from manipulating objects, and then draw cognitive conclusions about their observation. Proponents of this theory argued that increased learning enthusiasm increased in learner-focused setting. The correct application of any theory to a real-world situation reveals its efficacy. Students benefit when teachers consider and apply a learning theory to meet differences in learner styles (Baker & Dwyer, 2005). Teachers encourage achievement by promoting democracy, independence, and collaborative learning styles. According to Brostrom and Lassen (2006:179), "Learning style shows how learners assimilate and remember difficult materials, while learning strategies describe the way students choose to do a learning task". Constructivism encourages teachers to adapt instruction to support learner needs.

Constructivism supports learner-centered pedagogy more than the behaviorist and cognitive theories. The behaviorist and cognitive theories suggest that students need to connect with their learning in a personal way but constructivism stresses comprehensive learner-connectedness. Prince and Felder (2007) suggested that exploring, manipulating, and asking complex questions improve student cache of new information. Hsieh and Sun (2007) argued that aligning a strategy with the constructivist view include learner interactions. The student's experience assists their effort to form new knowledge through discovery learning. Prince and Felder's (2007) research associated the inductive methods of discovery, inquiry, and problem-based learning with constructivist view of learner-centeredness. In constructivist learning environments, student process and discover knowledge. The study focused on student achievement in middle schools and beyond, but the findings have implications for learning groups in elementary grades. Prince and Felder (2006) recommended that teachers should cut traditional lecturing and expand students" cognitive ability through inductive learning methods. Like Cornelius-White (2007), Prince and Felder (2006) agreed that shifting the responsibility for learning from teachers to students provides experiences not attainable through deductive methods.

The final inquiry strategy researched for posterity in learner-centered, educational technology environs is *Case-Based Reasoning* (CBR) or instruction. This type of inquiry strategy has been defined by Jonassen et al. (2000) as an active-learning pedagogy designed for problem/situation analysis and theoretically problem/situation solving, stressing several varied viewpoints and possible outcomes to said problem/situation. Cases or experiences in CBR must be; real, rely on research and study, and foster creation of multiple perspectives by learners (Jonassen et al., 2000). Learners who participate in case-based instruction develop the skills of: group work, problem solving, gathering and analyzing technological data, higher-order decision making, varied

formats of presentation genres, and time management. This inquiry-based strategy applies two-fold the learning theories of constructivism and social learning through a learner-centered environment that puts in place scaffolding framework conducive to multiple intelligences and student-created solutions.

Teacher-student collaboration, discovery learning, and group instructions form the core characteristics of the constructivist theory. The effectiveness of each feature depends on students and teacher collaboration. Students learn from each other and contribute to research. The pedagogy encourages group and individual goal setting and achievement recognition. Learner-centered pedagogy improves dull learning through engaging, collaborative, interesting, and challenging instructions.

In summary, student-centered language instruction focuses on students' needs for learning and communicating effectively. The teacher provides opportunities for students to engage actively in meaningful communication, encourages them to take ownership of their own learning, and gives them explicit instruction in the content and language skills they need and in strategies for gaining that knowledge and those skills (Goldenberg, 2008). (For specific ways to promote learner engagement in instruction, see Sherris, in press.)

The purpose of this study was to understand the following questions:

1. What are teachers' beliefs about student-centered pedagogy?
2. Is there correlation between components of student-centered pedagogy?
3. Is there a difference between teachers' student-centered beliefs and variables such as their gender, age, school level, and teaching experience?

RESEARCH METHODOLOGY

The methodology of this study was a quantitative research. The population of this study was all teachers in primary, middle and secondary schools (K-12) in the Zahedan city in Iran. Of 6827 teachers 365 samples with use of table sample size of Krejcie and Morgan (1970) were produced to questionnaire (Table 1).

Table 1
Population and Sample

Variables		Population	Sample
Primary S.	Male	913	49
	Female	2398	128
	Total	3311	177
Middle S.	Male	755	40
	Female	987	53
	Total	1742	93
Secondary S.	Male	739	40
	Female	1036	55
	Total	1775	95
Total		6827	365

Part of instrument was the inventory to measure teachers' beliefs about student-centered education of Isikoglu et al. (2009) employed to gather data. This inventory has 21 items in four components: educational objectives, content, teaching strategies, and instructional assessment and the other two components were educational technology and learning environment with 11 items. Internal consistency reliability was estimated by Cronbach's alphas. Table 1 reports summary measures of construct validity and reliability for each of the seven

engagement scales. SPSS 15 was used to produce mean; standard deviations; Pearson Product Moment Correlation (r); T-test; Bonferroni Post Hoc test and ANOVA.

Table 2
Summary measures of reliability

Variables	N. of Items	Cronbach's Alpha
Educational Objectives	5	.75
Content	5	.71
Teaching Strategies	6	.78
Instructional Assessment	5	.76
educational technology	6	.79
Learning Environment	5	.77
Total	32	.84

RESULTS

The figures at table 3 show that the teachers marked relatively high scores on student-centered pedagogy (M=3.88, SD=.45). However, the examination of the subscales showed, educational technology received the highest (M=3.91) and content received the lowest (M=3.62) means. These findings indicated that the current sample believed that curriculum goals should be student-centered.

Table 3
Distributions of components of student-centered pedagogy (N=365)

Variables	Mean	Std. Deviation
Educational Objectives	3.7562	.63613
Content	3.6192	.57909
Teaching Strategies	3.9123	.57224
Instructional Assessment	3.8137	.58679
Educational Technology	3.8301	.54840
Learning Environment	3.7863	.57735
Student-Centered Pedagogy (in overall)	3.8849	.45443

Table 4 shows there was relatively high positive correlation between components of student-centered pedagogy. The highest correlation is related to the educational objectives with the educational technology, the teaching strategies with the content, teaching strategies with the instructional assessment, and the learning environment with the instructional assessment.

Table 4
Correlation between the components of student-centered pedagogy (N=365)

Variables	EO	C	TS	IA	ET
Educational Objectives					
Content	.381(**)				
Teaching Strategies	.364(**)	.405(**)			
Instructional Assessment	.283(**)	.357(**)	.418(*		

			*)		
Educational Technology	.464(**)	.246(**)	.329(**)	.277(**)	
Learning Environment	.411(**)	.348(**)	.417(**)	.580(**)	.293(**)

**P < .001

In order to compare male and female teachers' beliefs about overall student-centered pedagogy and the components of it, independent samples t-tests were performed. These analyses revealed a significant difference between the two groups in the component of educational activities and the mean score of female was higher than male. There was no significant difference between the male and female teacher' beliefs on overall and other scales (table 5). Several researchers found similar results (Cheung & Wong, 2002; Tan, 2001). On the other hand, some researchers found that female teachers implemented student-centered education more than their male counterparts (Beck et al., 2000).

Table 5
The comparison male and female teachers' beliefs about student-centered pedagogy (N=365)

Variables	Sex	N	Mean	Std. D.	t	df
Educational Objectives	Male	129	3.5814	.63366	-3.958(**)	363
	Female	236	3.8517	.61820		
Content	Male	129	3.5581	.52896	-1.491	363
	Female	236	3.6525	.60321		
Teaching Strategies	Male	129	3.8605	.58288	-1.281	363
	Female	236	3.9407	.56557		
Instructional Assessment	Male	129	3.7907	.52551	-.553	363
	Female	236	3.8263	.61843		
Educational Technology	Male	129	3.8062	.50121	-.616	363
	Female	236	3.8432	.57316		
Learning Environment	Male	129	3.7597	.58330	-.651	363
	Female	236	3.8008	.57479		
Student-Centered Pedagogy (in overall)	Male	129	.45244	.03983	-1.001	363
	Female	236	.45550	.02965		

P > .05 **P < .001

The compute of ANOVA about the school level, overall and the learning environment means of the student-centered pedagogy were statistically significant for elementary, middle and secondary school teachers. As in table 6 is showed, Bonferroni Post Hoc test indicated that the middle school teachers scored significantly higher on overall of the student-centered pedagogy than secondary school teachers. There was no significant difference between the groups in other components.

Table 6
The comparison school level teachers' beliefs about student-centered pedagogy (N=365)

Variables	School Level	N	Mean	Std. D.	f	df
Educational Objectives	Pr. S.	177	3.7910	.64520	.995	2 362
	Mi. S.	93	3.6774	.61080		
	Se. S	95	3.7684	.64334		
Content	Pr. S.	177	3.6554	.54344	1.341	2 362
	Mi. S.	93	3.6344	.58579		
	Se. S	95	3.5368	.63263		
Teaching Strategies	Pr. S.	177	3.9548	.55205	9.562	2 362
	Mi. S.	93	4.0430	.54998		
	Se. S	95	3.7053	.58115		
Instructional Assessment	Pr. S.	177	3.8136	.57824	2.706	2 362
	Mi. S.	93	3.9140	.52453		
	Se. S	95	3.7158	.64681		
Educational Technology	Pr. S.	177	3.8249	.55171	.266	2 362
	Mi. S.	93	3.8065	.53686		
	Se. S	95	3.8632	.55755		
Learning Environment	Pr. S.	177	3.8588	.53016	3.201(*)	2 362
	Mi. S.	93	3.6774	.62834		
	Se. S	95	3.7579	.59637		
Student-Centered Pedagogy (in overall)	Pr. S.	177	3.9153	.43777	4.445(*)	2 362
	Mi. S.	93	3.9462	.45122		
	Se. S	95	3.7684	.47159		

P > .05 *P < .05

The compute of ANOVA about the age groups, overall and the teaching strategies means of the student-centered pedagogy were statistically significant for teachers with 20-30, 31-40 and 41 and more years old. Bonferroni Post Hoc test showed that the teachers with 20-30 years old scored significantly higher on overall of the student-centered pedagogy and teaching strategies than other age groups. There was no significant difference between the groups in other components (Table 7).

Table 7
Teachers' beliefs about student-centered pedagogy by age groups (N=365)

Variables	Age	N	Mean	Std. D.	f	df
Educational Objectives	20-30	42	3.7857	.56464	1.796	2 362
	31-40	236	3.7924	.62849		
	41-More	87	3.6437	.68160		
Content	20-30	42	3.7143	.55373	.822	2 362
	31-40	236	3.6186	.59672		
	41-More	87	3.5747	.54201		
Teaching Strategies	20-30	42	4.1905	.39744	5.754(*)	2 362
	31-40	236	3.8771	.55901		
	41-More	87	3.8736	.64348		
Instructional Assessment	20-30	42	3.9286	.46291	1.373	2 362
	31-40	236	3.8178	.56555		
	41-More	87	3.7471	.68571		
Educational Technology	20-30	42	3.8571	.56618	.153	2 362
	31-40	236	3.8347	.54794		
	41-More	87	3.8046	.54643		
Learning Environment	20-30	42	3.7143	.45723	.484	2 362
	31-40	236	3.8051	.56506		
	41-More	87	3.7701	.65948		
Student-Centered Pedagogy (in overall)	20-30	42	3.9762	.46790	4.081(*)	2 362
	31-40	236	3.9110	.43823		
	41-More	87	3.7701	.47498		

P > .05 *P < .05

The compute of ANOVA about job experiences groups showed that there were significance differences between the groups in overall and the instructional assessment means of the student-centered pedagogy. Indeed, compute of Bonferroni Post Hoh showed that teachers were 11 to 20 years experiences, who got the higher scores on overall of the student-centered pedagogy in comparison with other groups. There was no significant difference between the groups in other components (table 8).

Table 8
Teachers' beliefs about student-centered pedagogy by teaching experience (N=365)

Variables	Teaching Ex.	N	Mean	Std. D.	f	df
Educational Objectives	1-10	52	3.8462	.50038	.626	2 362
	11-20	185	3.7351	.59901		
	21-More	128	3.7500	.73173		
Content	1-10	52	3.6538	.55606	.708	2 362
	11-20	185	3.6432	.59186		
	21-More	128	3.5703	.57072		
Teaching Strategies	1-10	52	3.9423	.57440	.615	2 362
	11-20	185	3.9351	.53782		
	21-More	128	3.8672	.61951		
Instructional Assessment	1-10	52	3.8846	.54786	4.085(*)	2 362
	11-20	185	3.8757	.57171		
	21-More	128	3.6953	.60910		
Educational Technology	1-10	52	3.9038	.49545	.664	2 362
	11-20	185	3.8054	.60341		
	21-More	128	3.8359	.48240		
Learning Environment	1-10	52	3.8462	.50038	.898	2 362
	11-20	185	3.8054	.59433		
	21-More	128	3.7344	.58167		
Student-Centered Pedagogy (in overall)	1-10	52	3.9038	.49545	3.894(*)	2 362
	11-20	185	3.9405	.44445		
	21-More	128	3.7969	.44118		

P > .05 *P < .05

DISCUSSION AND CONCLUSION

The purpose of this study was to examine teachers' opinions about student-centered instructions, as well as to study effective factors in their instructional beliefs. Six important component of student-centered pedagogy examined in this study that were, educational objectives, content, teaching strategies, and instructional assessment, educational technology and learning environment. In base of teachers' view, the components of student-centered pedagogy have a high influence on their instructional beliefs and also there was relatively high positive correlation between components of student-centered pedagogy. The analysis some variables such as gender, age, school level and teaching experience indicated, some those had an impact on student-centered beliefs. There was no significant difference between the male and female teachers' beliefs on overall student-centered pedagogy. The analysis also showed overall means of the student-centered pedagogy was statistically significant for elementary, middle and secondary school teachers, age groups and teaching experience.

Student-centered pedagogy influences student achievement with varied instructional arrangements based on the unique needs of each student. This form of pedagogy provides teachers an opportunity to focus on students and meet their learning needs through learner-centered instructions. Such individualized learning arrangements impact student performance in different ways. When a teacher delivers instructions through learner-centered pedagogy, the method increases students' participative activities and cognitive focus.

Effective use of learner-centered instructional strategies highlights the importance of instructional groups based on features that match students' ability and interest. Individualized and group instructions arrangements help to enhance performance of underachieving students. Teachers used individualized instructions to remediate instructions. Student-centered pedagogy allows teachers to individualize instructions based on the students' learning goals.

A review of the literature (see introduction) showed that student-centered pedagogy improves academic performance. Student-centered pedagogy favors the constructivist approach. It encourages students to learn through experiences with technology and other teaching strategies. Effective teachers recognize cultural differences, promote collaboration, independent research, higher order thinking, and open discussion. Teachers use strategies that give learners direct control of their learning to achieve learner-centered success through participation (Musti-Rao & Cartledge, 2007). Inadequate learner-centered training and training misuse achieve the same ineffectiveness. Appropriate training and practice improve the art of learner-centered instruction delivery. Active student participation decides the learner-centeredness of the pedagogy. Student-centered strategies need teachers to focus on students' needs. The teacher also uses a variety of group strategies and inquiry teaching methods. Pair teaching, interest groups, discovery learning, field trips, experiments, and computer-based instructions are among some of the strategies teachers used. Students learn to manage their learning while teachers conduct periodic performance conferences.

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